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Attorney for Petitioners NORTHERN
CALIFORNIA RIVERWATCH and
COAST ACTION GROUP

BEFORE THE STATE WATER RESOURCES CONTROL BOARD

In re: Santa Rosa Subregional Water Reclamation) File No. _____
System - California Regional Water Quality Control)
Board, North Coast Region Order No. R1-2006-) **PETITION FOR REVIEW**
0045, NPDES No. CA0022764)

I. Name and Contact Information of Petitioners.

The petitioners include:

Northern California River Watch
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II. REGIONAL BOARD ACTION BEING PETITIONED.

This petition seeks review of California Regional Water Quality Control Board, North Coast Region ("Regional Board") Order No. R1-2006-0045 and NPDES No. CA0022764 issued for the Santa Rosa Subregional Water Reclamation System's discharge of municipal wastewater

to the Laguna de Santa Rose and other tributaries of the Russian River. A copy of the Regional Board's final permit is attached hereto as Exhibit A.

III. THE DATE THE REGIONAL BOARD ACTED.

September 20, 2006. *See* Exhibit A, p. 2.

IV. THE REGIONAL BOARD ERRED BY ISSUING INTERIM AND FINAL EFFLUENT LIMITS FOR NITRATE AND BIOSTIMULATORY SUBSTANCES THAT DO NOT PROTECT BENEFICIAL USES IN THE LAGUNA DE SANTA ROSA AND WITHOUT SUBSTANTIAL EVIDENTIARY BASES.

Petitioners seek State Board review of interim and final effluent limitations established in Order No. R1-2006-0045 for nitrates and biostimulatory substances as follows:

A. The Final Effluent Limitation For Nitrate Is Not Protective Of Aquatic Beneficial Uses And Is Inconsistent With the Zero Limit Also Established for Nitrate In the Permit.

The Regional Board established two final effluent limitations for nitrate: 10.0 mg/L as N for nitrates on an average monthly basis, or, assuming that the permit is not reopened to incorporate an intervening waste load allocation from a completed total maximum daily load ("TMDL"), "zero (i.e., 'no net loading')" nitrates.¹ Permit at 12 (§ 4(A)(1)(f) & Table 8). Both limits become effective on November 9, 2011. *See* Permit at 13 (§ 4(A)(2)(b)). Petitioners object to the average monthly 10 mg/L nitrate limit because it is based solely on drinking water standards that are only protective of human health uses, specifically drinking water. That level of discharge is not protective of aquatic uses. Recent studies indicate, for example, that nitrates at levels of 1 mg/L as N have detrimental impacts on trout. Where the North Coast has not established a water-quality criterion for nitrate that is protective of aquatic uses, the Board is obliged to use either EPA criteria or other appropriate criteria that are fully protective of beneficial uses. *See* 40 C.F.R. § 122.44(d)(vi). Because the Regional Board did not consider or adopt a final nitrate limitation that would protect beneficial uses in the Laguna de Santa Rosa and other receiving waters into which Santa Rose discharges, the final limitation for nitrates is

¹ Any proposal to achieve no net loading by reducing loads elsewhere in the watershed also would require the Board to establish a specific effluent limitation for Santa Rosa based in part on its approval of such load reductions. *See* Order at 13, n. 5.

unprotective, fails to implement the Regional Board's Basin Plan and is inconsistent with the federal regulations.

In addition, the final limitation of 10 mg/L as N for nitrate is inconsistent with the second limitation set for nitrate of zero. The Board cannot have it both ways – either Santa Rosa must achieve a zero discharge of nitrates by November 10, 2011 or be subject to an allowable concentration limit. The Regional Board's Basin Plan objective for biostimulatory substances states that "Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses." North Coast Basin Plan at 3-3.00. In the case of the Laguna de Santa Rosa, because that waterbody already is severely impaired by excessive levels of nitrogen and phosphorous and low dissolved oxygen, any discharge of nitrate causes or contributes to the ongoing violations of the Basin Plan standard. Accordingly, of the two inconsistent final effluent limits established for nitrate, the zero limit is the only limit that will protect beneficial uses.

The 10 mg/L as N limitation for nitrate also is not protective of beneficial uses, including drinking water uses, because it is established as a monthly average. Under the federal regulations, Santa Rosa's permit, at a minimum, must also include a weekly average limit for nitrates. *See* 40 C.F.R. § 122.45(d)(2). Given the impaired status of the Laguna de Santa Rosa and assuming any limit of above zero is appropriate, a daily limit should be established for Santa Rosa's discharges. The Board's use of a monthly average would not prevent potential spikes in nitrate levels, even potentially for several weeks, that would have substantial impacts on the already impaired Laguna de Santa Rosa and its beneficial uses.

B. The Interim Effluent Limit for Nitrate Is Not Protective of Beneficial Uses And Is Inconsistent With The Regional Board's Compliance Schedule Provision.

The interim limit established for nitrate does not make reasonable progress toward attaining the final limit of zero and allows excessive discharges of nitrate that do not protect beneficial uses. Pending the effective date of the final effluent limitation for nitrate, the Regional Board established an interim average monthly effluent limitation for nitrate of 12.9

1 mg/L as N for the next five years. Permit at 13 (§ 4(A)(2)(b) & Table 10). The interim
2 limitation established by the Board for nitrates pays no mind whatsoever to either the impaired
3 status of the Laguna de Santa Rosa or the obvious impacts of allowing a monthly average of 12.9
4 mg/L as N of nitrate to discharge to that waterbody. In addition to being excessive to begin with,
5 it also needs to be expressed as a weekly limitation or less. *See* 40 C.F.R. § 122.45(d)(2).

6 Moreover, there is a disconnect between the excessively high interim limitation for
7 nitrate and the zero limitation scheduled for November 10, 2011. The Regional Board's Basin
8 Plan provides that: "The schedule of compliance shall include a time schedule for completing
9 specific actions (including interim effluent limits) that demonstrate reasonable progress toward
10 attaining the effluent and/or receiving water limitations, water quality objectives, criteria, or
11 prohibitions." Basin Plan, Recent Amendments Chapter 3 & 4 (emphasis added). According to
12 the Permit's Fact Sheet, the only demonstration made by Santa Rosa in support of the schedule
13 of compliance for nitrate was it would take the City five years to perform studies about
14 complying with the final nitrate limit. Fact Sheet at F-47. That frank disclosure that Santa Rosa
15 will spend the next five years merely completing studies, coupled with an interim limit that will
16 not bring the City any closer to complying with the final limit of zero does not constitute
17 reasonable further progress toward attaining the zero limit. The Basin Plan also provides that
18 Santa Rosa's interim nitrate limit implement "[t]he highest discharge quality that is technically
19 and economically feasible to achieve until final compliance is attained." To make any sense, the
20 interim limit for nitrate should periodically ratchet down toward the zero limitation or at least an
21 effluent quality that begins to approach the levels one may expect in a final TMDL. Setting a
22 static interim limit based on Santa Rosa's 99th percentile of its past performance rewards the City
23 for its past excessive discharges and discourages future reductions in nitrate levels. By allowing
24 Santa Rosa to continue at its currently excessive discharge levels for nitrate without any
25 reductions in the interim toward the final limit is not progress – it is a continuation of the status
26 quo that already has contributed to the severe impairment of the Laguna de Santa Rosa.

1 **C. The Absence Of A Mass Limit For Nitrate In The Permit Violates The**
2 **Federal Regulations.**

3 No mass limitation for nitrate discharges from Santa Rosa is included in the permit. “All
4 pollutants limited in permits shall have limitations, standards, or prohibitions expressed in terms
5 of mass. . . .” 40 C.F.R. § 122.45(f). Santa Rosa’s permit must include a mass limit for nitrate.

6 **D. The Interim Limits For Phosphate and Nitrogen Also Are Inconsistent With**
7 **the Regional Board’s Compliance Schedule Authority.**

8 For the same reasons described for the interim nitrate limit, the average monthly interim
9 limitations for phosphate and nitrogen also are inconsistent with the need for at least a weekly
10 average limit or less and the Board’s compliance schedule authority. *See* Permit at 14 (§
11 IV(a)(2)(c)). The federal regulations require limitations to be expressed as weekly and monthly
12 average limitations for POTWs. *See* 40 C.F.R. § 122.45(d)(2). Likewise, looking in for five
13 years the past performance of Santa Rosa’s plant in terms of nitrogen and phosphate discharges
14 makes no further progress toward achieving a final limitation of zero. *See* Compliance Schedule
Basin Plan Amendment.

15 **E. The Interim Mass Limitations Established For Nitrogen And Phosphate**
16 **Have No Rationale Relationship To Actual Discharges At The Santa Rosa**
17 **Facility, Are Not Supported By Substantial Evidence And Are Inconsistent**
18 **With The Board’s Compliance Schedule Authority.**

19 The most objectionable part of the Santa Rosa permit is the completely arbitrary
20 inclusion of extremely high interim loading “limits” for both nitrogen and phosphates. *See*
21 Permit at 14 ((§ IV(a)(2)(d)). For the next five years, the Board allows Santa Rosa to discharge
22 up to 270,336 lbs of Total Nitrogen and 48,142 lbs of Total Phosphate over the course of its
23 entire discharge season. These numbers apparently were devised by adding up the maximum
24 observed loadings for each month of discharge over the last three years of discharge data. *See*
25 Fact Sheet at F-49-51. That methodology results in mass limits that grossly exaggerate the actual
26 mass of phosphate and nitrogen discharged by the City. Reviewing the data shows that the
27 actual loading of phosphate by the City over the course of a discharge season is closer to about
28 4,000 lbs – ten times less than the adopted mass “limit.” Similarly, even if one were to apply the
interim concentration limit for nitrogen of 3.0 mg/L – an exaggerated 99th percentile,

1 performance-based number to begin with – and multiply by the actual flows from the Facility, it
2 would result in a mass loading of about 25,000 lbs of nitrogen over the course of a discharge
3 season – ten times less than the inflated mass limit for nitrogen included in the permit.

4 Setting interim mass limits many times greater than the current loadings of phosphate and
5 nitrogen from the City into impaired waters for the next five years also fails to meet the
6 reasonable further progress standard required by the Regional Board’s compliance schedule
7 authority. Such almost random mass limits do not come close to demonstrating any progress
8 toward attaining a limit of zero for phosphate and nitrogen or, assuming a TMDL is established,
9 any conceivable waste load allocations for the City. Nor could those excessive interim mass
10 limits represent “[t]he highest discharge quality that is technically and economically feasible to
11 achieve until final compliance is attained,” given that the City already discharges must less
12 loadings of these two pollutants.

13 Obviously, the adopted mass limits have nothing to do with the actual performance of the
14 Santa Rosa plant, never mind serve to protect, even a little bit, the already impaired beneficial
15 uses of the Laguna de Santa Rosa and other tributaries. The State Board should rectify the
16 random mass limits adopted by the Board and require mass limits that reflect current
17 performance to start and then ratchet down toward the final limit of zero five years from now.

18 **V. PETITIONERS ARE AGGRIEVED.**

19 The petitioners are both non-profit environmental organizations who each have members
20 that use the Laguna de Santa Rosa and downstream waters, including the Russian River. Their
21 members’ use and enjoyment of the Laguna and downstream are curtailed by the violation of
22 water quality standards in the Laguna de Santa Rosa and proceeding downstream, caused in large
23 part by Santa Rosa’s wastewater discharges. Both petitioners have participated for years before
24 the Regional Board attempting to obtain further controls on Santa Rosa’s discharges. Further
25 control on the City’s discharges of nitrates, phosphate and nitrogen would help to ameliorate the
26 long-standing harms to petitioners and their members.

1 **VI. ACTION REQUESTED OF STATE BOARD.**

2 Petitioners ask the State Board to issue an order 1) vacating the 10 mg/L as N final
3 effluent limitation for nitrate, 2) ordering the Regional Board to adopt interim effluent limitations
4 for nitrate, nitrogen and phosphate that include weekly average and daily effluent limitations and
5 then ratchet down to the final limitations of zero; 3) ordering the Regional Board to adopt a
6 mass limit for nitrate that is no greater than the actual loading of nitrate from the City and that
7 ratchets down over five years toward the final limit of zero, and 4) ordering the Regional Board
8 to adopt mass limitations for phosphate and nitrogen that are no greater than the actual loadings
9 of those pollutants from the City and that ratchet down over five years toward the final limits of
10 zero.

11 **VII. STATEMENT OF POINTS AND AUTHORITIES.**

12 Any necessary legal issues are addressed in Section IV above.

13 **VIII. STATEMENT OF COPIES SENT TO REGIONAL BOARD AND DISCHARGER.**

14 Copies of this petition are being e-mailed to both the Regional Board and the discharger
15 at the following e-mail addresses:

16 Catherine Kuhlman, Charles E. Reed, Regional Board – ckuhlman@waterboards.ca.gov,
17 creed@waterboards.ca.gov;

18 Suzanne Rawlings – srawlings@ci.santa-rosa.com.us;

19 Nicole Granquist, Downey Brand LLP – ngrandquist@downeybrand.com;

20 Roberta Larson, Somach, Simmons & Dunn – blarson@lawssd.com.

21 **IX. ISSUES RAISED BEFORE REGIONAL BOARD.**

22 Petitioners certify that each of the issue set forth above were presented either in writing
23 or orally to the Regional Board prior to its adoption of the Permit on September 20, 2006.

24 Dated: October 19, 2006

25 Respectfully submitted,

26 
27 Michael R. Lozeau
28 Attorney for Petitioners



Linda S. Adams
Secretary for
Environmental Protection

California Regional Water Quality Control Board

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Arnold Schwarzenegger
Governor

ORDER NO. R1-2006-0045
NPDES NO. CA0022764

WASTE DISCHARGE REQUIREMENTS AND MASTER RECLAMATION PERMIT FOR THE SANTA ROSA SUBREGIONAL WATER RECLAMATION SYSTEM

The following Discharger is subject to waste discharge requirements as set forth in this Order:

Table 1. Discharger Information

Discharger	City of Santa Rosa
Name of Facility	Santa Rosa Subregional Water Reclamation Facility
Facility Address	4300 Llano Road
	Santa Rosa, CA 95407
	Sonoma County
The United States Environmental Protection Agency and the California Regional Water Quality Control Board, North Coast Region have classified this discharge as a major discharge.	

The discharge by the Santa Rosa Subregional Water Reclamation Facility from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Locations

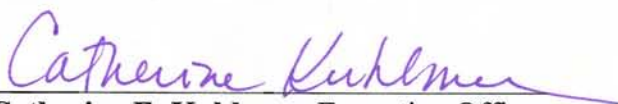
Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
002- Arlington Pond	AWT	38 ° , 22' , 39" N	122 ° , 45' , 26" W	Colgan Creek
003- Brown Pond	AWT	38 ° , 24' , 25" N	122 ° , 47' , 49" W	Unnamed Ditch, tributary to Laguna de Santa Rosa
005- LaFranconi Pond	AWT	38 ° , 24' , 20" N	122 ° , 46' , 42" W	Unnamed Ditch, tributary to Laguna de Santa Rosa
006A- Meadow Lane Pond D	AWT	38 ° , 22' , 17" N	122 ° , 46' , 31" W	Laguna de Santa Rosa
006B- Meadow Lane Pond D	AWT	38 ° , 22' , 17" N	122 ° , 46' , 31" W	Laguna de Santa Rosa
008- West College Pond 1C	AWT	38 ° , 26' , 30" N	122 ° , 45' , 49" W	Santa Rosa Creek
009- Ambrosini Pond	AWT	38 ° , 26' , 43" N	122 ° , 47' , 19" W	Santa Rosa Creek
012A- Delta Pond	AWT	38 ° , 26' , 54" N	122 ° , 49' , 27" W	Santa Rosa Creek
012B- Delta Pond	AWT	38 ° , 26' , 54" N	122 ° , 49' , 27" W	Santa Rosa Creek
014- Meadow Lane A Pond	AWT	38 ° , 22' , 17" N	122 ° , 46' , 31" W	Laguna de Santa Rosa
015- Laguna Treatment Plant	AWT	38 ° , 22' , 17" N	122 ° , 46' , 31" W	Laguna de Santa Rosa
016- Laguna Joint Wetlands	AWT	38 ° , 22' , 17" N	122 ° , 46' , 31" W	Laguna de Santa Rosa

Table 3. Administrative Information

This Order was adopted by the Regional Water Board on:	September 20, 2006
This Order shall become effective on:	November 9, 2006
This Order shall expire on:	November 9, 2011
The Discharger shall file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, as application for issuance of new waste discharge requirements, not later than:	March 20, 2011

IT IS HEREBY ORDERED, that Order No. 2000-03 (the "Long Range" NPDES Order) is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the federal Clean Water Act, and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

I, **Catherine E. Kuhlman**, Executive Officer, do hereby certify the following is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, North Coast Region, on September 20, 2006.


Catherine E. Kuhlman, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD REGION 1, NORTH COAST REGION

ORDER NO. **R1-2006-0045**
NPDES NO. **CA0022764**

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I. FACILITY INFORMATION

The following Discharger is authorized to discharge in accordance with the conditions set forth in this Order:

Table 4. Facility Information

Discharger	City of Santa Rosa
Name of Facility	Santa Rosa Subregional Water Reclamation Facility
Facility Address	4300 Llano Road
	Santa Rosa, CA 95407
	Sonoma County
Facility Contact, Title, and Phone	Miles Ferris, Director of Utilities, (707) 543-3930
Mailing Address	69 Stony Circle, Santa Rosa, CA 95401
Type of Facility	Publicly Owned Treatment Works
Facility Design Flow	21.34 MGD, average dry weather flow 64 MGD, peak weekly design flow 47.3 MGD, peak monthly design flow

II. FINDINGS

The California Regional Water Quality Control Board, North Coast Region (hereinafter Regional Water Board), finds:

- A. **Background.** The City of Santa Rosa (hereinafter Discharger) is currently discharging under Order No. 2000-03 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0022764, adopted on March 15, 2000. The Discharger submitted a Report of Waste Discharge, dated September 15, 2004 and applied for an NPDES permit renewal to discharge up to 21.34 MGD, Average Dry Weather Flow (ADWF) of treated wastewater from the City of Santa Rosa Subregional Water Reclamation System (hereinafter Subregional System). The application was deemed complete on March 15, 2005.
- B. **Facility Description.** The Discharger owns and operates the Subregional System, a Publicly Owned Treatment Works (POTW) that consists of a wastewater collection system, wastewater treatment facility (WWTF), effluent disposal system, and water recycling facilities. In addition to the wastewater collection system owned and operated by the Discharger, satellite wastewater collection systems individually owned, operated and maintained by the Cities of Cotati, Rohnert Park, and Sebastopol convey wastewater from those communities to the WWTF.

The WWTF consists of grit removal in aerated grit chambers, sludge and scum removal in primary sedimentation tanks, biological secondary treatment (activated sludge) with alum coagulation, flocculation, and clarification followed by tertiary filtration and ultraviolet light disinfection that meet Title 22 guidelines. Biosolids generated during the treatment process are thickened, anaerobically digested, dewatered using belt filters and polymer addition, and beneficially used as soil amendment. Wastewater is discharged from Discharge Points 002, 003, 005, 006A, 006B, 008, 009, 012A, 012B, 014, 015 and 016 (see table on cover page) to the Laguna de Santa Rosa and its tributaries, waters of the United States and tributary to the Russian River within the Russian River Hydrologic Unit (114.00) and its tributaries. Storm water falling within the confines of the composting facility is returned to the treatment facility headworks. The treatment facility currently operates under a Storm Water Pollution Prevention Plan. Attachment B provides a topographic map of the area around the facility. Attachment C provides a flow schematic of the facility.

- C. **Legal Authorities.** This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the United States Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4 of the CWC for discharges that are not subject to regulation under CWA section 402.
- D. **Background and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. Attachment F, which contains background information and rationale for Order requirements, is hereby incorporated

into this Order and, thus, constitute part of the Findings for this Order. Attachments A through G are also incorporated into this Order.

- E. **California Environmental Quality Act (CEQA).** This action to adopt an NPDES permit is exempt from the provisions of the CEQA (Public Resources Code Section 21000, et seq.) in accordance with Section 13389 of the CWC.
- F. **Technology-based Effluent Limitations.** The Code of Federal Regulations (CFR) at 40 CFR §122.44(a) requires that permits include applicable technology-based limitations and standards. This Order includes technology-based effluent limitations based on tertiary treatment or equivalent requirements that meet both the technology-based secondary treatment standards for POTWs and protect the beneficial uses of the receiving waters and/or are based on best professional judgment pursuant to CWA Section 402(a)(1)(B). The Regional Water Board has considered the factors listed in 40 CFR 125.3(c) and (d) in establishing these requirements. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (Attachment F).
- G. **Water Quality-based Effluent Limitations.** Section 122.44(d) of 40 CFR requires that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where numeric water quality objectives have not been established for a pollutant, water quality-based effluent limitations (WQBELs) may be established: (1) using USEPA criteria guidance under CWA Section 304(a), supplemented where necessary by other relevant information; (2) on an indicator parameter for the pollutant of concern; or (3) using a calculated numeric water quality criterion, such as a proposed State criterion or policy interpreting the State's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).
- H. **Water Quality Control Plans.** The Regional Water Board adopted a Water Quality Control Plan for the North Coast Region (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Beneficial uses are designated for all waters in the North Coast Region. The waterbodies are separated into various categories. Wetlands and groundwater are described outside of the Coastal and Inland Waters categories, as they are unique waterbodies that require more detailed descriptions. In addition, State Water Resources Control Board (State Water Board) Resolution No. 88-63 requires that, with certain exceptions, the Regional Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan.

The Basin Plan, Section 2, at page 2-1.00 states that the beneficial uses of any specifically identified water body generally applies to its tributary streams. The Basin Plan does not specifically identify beneficial uses for the Laguna de Santa Rosa, Santa Rosa Creek, and Colgan Creek, but does identify present and potential uses for the Russian River, to which these waterbodies are tributary. Thus, as discussed in detail in the Fact Sheet (Attachment F), beneficial uses applicable to the Laguna de Santa Rosa, Santa Rosa Creek, Colgan Creek and the unnamed ditch, tributary to Laguna de Santa Rosa are as follows:

Discharge Point	Receiving Water Name	Beneficial Use(s)
002	Colgan Creek	<p><u>Existing:</u> Agricultural supply (AGR); industrial service supply (IND); Ground water recharge (GWR); navigation (NAV); hydropower generation (POW); contact (REC-1) and non-contact (REC-2) water recreation; commercial and Sport fishing (COMM); Warm freshwater habitat (WARM); cold freshwater habitat (COLD); wildlife habitat (WILD); preservation or rare, threatened or endangered species (RARE); freshwater replenishment (FRESH); migration of aquatic organisms (MIGR); spawning, reproduction and/or early development (SPWN); Native American Culture (CUL), subsistence fishing (FISH); Flood peak attenuation/Flood water storage (FLD); Water quality enhancement (WQE).</p> <p><u>Potential:</u> Municipal and domestic water supply (MUN); industrial process supply (PRO); shellfish harvesting (SHELL); aquaculture (AQUA).</p>
003	Unnamed Ditch, tributary to Laguna de Santa Rosa	
005	Unnamed Ditch, tributary to Laguna de Santa Rosa	
006A, 006B, 007, 014, 015, 016	Laguna de Santa Rosa	
008, 009, 012A, 012B	Santa Rosa Creek	<p><u>Existing:</u> Municipal and domestic water supply (MUN); agricultural supply (AGR); industrial service supply (IND); Ground water recharge (GWR); navigation (NAV); contact (REC-1) and non-contact (REC-2) water recreation; commercial and Sport fishing (COMM); Warm freshwater habitat (WARM); cold freshwater habitat (COLD); wildlife habitat (WILD); preservation or rare, threatened or endangered species (RARE); migration of aquatic organisms (MIGR); spawning, reproduction and/or early development (SPWN); Native American Culture (CUL), subsistence fishing (FISH), Flood peak attenuation/Flood water storage (FLD), Water quality enhancement (WQE).</p> <p><u>Potential:</u> Industrial process supply (PRO); hydropower generation (POW); shellfish harvesting (SHELL); aquaculture (AQUA).</p>
	Freshwater Wetlands	<p><u>Existing:</u> Wetland Habitat (WET);</p> <p><u>Potential:</u> Municipal and domestic water supply (MUN); agricultural supply (AGR); industrial service supply (IND); Ground water recharge (GWR); freshwater replenishment (FRESH); navigation (NAV); contact (REC-1) and non-contact (REC-2) water recreation; commercial and Sport fishing (COMM); Warm freshwater habitat (WARM); cold freshwater habitat (COLD); wildlife habitat (WILD); preservation or rare, threatened or endangered species (RARE); migration of aquatic organisms (MIGR); spawning, reproduction and/or early development (SPWN); shellfish harvesting (SHELL); estuarine habitat (EST); aquaculture (AQUA); Native American Culture (CUL); Flood peak attenuation/Flood water storage (FLD), Water quality enhancement (WQE).</p>

The State Water Board adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters.

Requirements of this Order specifically implement the applicable Water Quality Control Plans.

- I. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR, which adopted the NTR criteria that were applicable in California. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.
- J. **State Implementation Policy.** On March 2, 2000, State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005.
- K. **Compliance Schedules and Interim Requirements.** Section 2.1 of the SIP provides that, based on a discharger's request and demonstration that it is infeasible for an existing discharger to achieve immediate compliance with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in an NPDES permit. Unless an exception has been granted under Section 5.3 of the SIP, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or May 18, 2010) to establish and comply with CTR criterion-based effluent limitations. Where a compliance schedule for a final effluent limitation exceeds one year, the Order must include interim numeric limitations for that constituent or parameter. Where allowed by the Basin Plan, compliance schedules and interim effluent limitations or discharge specifications may also be granted to allow time to implement a new or revised water quality objective. This Order includes compliance schedules and interim effluent limitations and discharge specifications. A detailed discussion of the basis for the compliance schedule(s) and interim effluent limitation(s) and/or discharge specifications is included in the Fact Sheet (Attachment F).
- L. **Antidegradation Policy.** Section 131.12 of 40 CFR requires that State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16. Resolution 68-16 incorporates federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. As discussed in detail in the Fact Sheet (Attachment F) the permitted discharge is consistent with the antidegradation provision of 40 CFR 131.12 and State Water Board Resolution 68-16.

- M. Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. Some effluent limitations in this Order are less stringent than those in the previous Order. As discussed in detail in the Fact Sheet (Attachment F) this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.
- N. Monitoring and Reporting.** NPDES regulations at 40 CFR 122.48 require that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorize the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.
- O. Standard and Special Provisions.** Standard Provisions, which in accordance with 40 CFR 122.41 and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachment D. The Regional Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet (Attachment F).
- P. Notification of Interested Parties.** The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet (Attachment F) of this Order.
- Q. Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet (Attachment F) of this Order.

III. DISCHARGE PROHIBITIONS

- A. The discharge of any waste not disclosed by the Discharger or not within the reasonable contemplation of the Regional Water Board is prohibited.
- B. Creation of a pollution, contamination, or nuisance, as defined by CWC Section 13050 is prohibited.
- C. The discharge of sludge or digester supernatant is prohibited, except as authorized under Section VI.C.6.e. (Solids Disposal and Handling Requirements).
- D. The discharge or reclamation of untreated or partially treated waste (receiving a lower level of treatment than described in Section II.A of the Fact Sheet) from anywhere within the collection, treatment, or disposal facility is prohibited, except as provided for in Prohibition III.E. and in Attachment D, Standard Provision G (Bypass Provision).

- E. Any sanitary sewer overflow (SSO) that results in a discharge of untreated or partially treated wastewater to (a) waters of the State, (b) groundwater, or (c) land that creates a pollution, contamination, or nuisance as defined in CWC section 13050(m) is prohibited.
- F. The discharge of waste to land that is not owned by or under agreement to use by the Discharger is prohibited except for use for fire suppression as provided in CCR Title 22 section 60307(a) and (b).
- G. The discharge of waste at any point not described in Finding II.B or authorized by any State Water Board or other Regional Water Board permit is prohibited.
- H. The average daily dry weather flow of waste into the Subregional System wastewater treatment facility in excess of 21.34 mgd, as determined from the lowest consecutive 30-day mean daily flow, is prohibited.
- I. The discharge of wastewater effluent from the WWTF to the Russian River or its tributaries is prohibited during the period May 15 through September 30 of each year.
- J. During the period of October 1 through May 14 (discharge season), discharges of recycled water shall not exceed five percent of the flow of the Russian River as measured at Hacienda Bridge (USGS gauge No. 11-4670.00). Compliance with the discharge rate limitations is determined as follows: 1.) the discharge of advanced treated wastewater shall be adjusted daily to avoid exceeding, to the extent practicable, 5% of the previous day's total daily flow of the Russian River as measured by USGS Gauge No. 11-4670.00 at Hacienda Bridge, and 2.) in no case shall the total volume of advanced treated wastewater discharged in a calendar month exceed 5% of the total volume of Russian River flow recorded at the Hacienda Bridge Gauge No. 11-4670.00 in the same calendar month. Daily flow comparisons shall be based on the 24-hour period from 12:01 a.m. to 12:00 midnight. At the beginning of the discharge season, the monthly flow volume comparisons shall be based upon the date when the discharge commenced to the end of the calendar month. At the end of the discharge season, the monthly flow volume comparisons shall be based upon the first day of the calendar month to the date when the discharge is ceased for the season.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations

1. Final Effluent Limitations

- a. The discharge of advanced treated wastewater, as defined by the WWTF's treatment design and the numerical limitations below, shall maintain compliance with the following effluent limitations at Discharge Point 015, with compliance measured at Monitoring Location M-001 as described in the attached MRP (Attachment E). The advanced treated wastewater shall be adequately oxidized, filtered [micro-filtered] and disinfected as defined in Title 22, Division 4, Chapter 3, California Code of Regulations (CCR).

Table 6. Final Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
BOD (5-day @ 20°C)	mg/L	10	15	---	---	---
	lbs/day ¹	1,780	2,670	---	---	---
	lbs/day ²	3,945	8,006	---	---	---
Total Suspended Solids	mg/L	10	15	---	---	---
	lbs/day ¹	1,780	2,670	---	---	---
	lbs/day ²	3,945	8,006	---	---	---
pH	standard units	---	---	---	6.0	9.0

- b. **Disinfection:** The disinfected effluent, sampled in each of the three effluent discharge channels shall not contain concentrations of total coliform bacteria exceeding the following concentrations:
- The weekly geometric mean concentration of the discharge channels shall not exceed a Most Probable Number (MPN) of 2.2 per 100 milliliters, using the bacteriological results of the last seven days for which analyses have been completed.
 - The number of coliform bacteria shall not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30-day period.
 - No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.
- c. **Percent Removal:** The average monthly percent removal of BOD (5-day, 20°C) and total suspended solids shall not be less than 85 percent. Percent removal shall be determined from the 30-day average value of influent wastewater concentration in comparison to the 30-day average value of effluent concentration for the same constituent over the same time period as measured at Monitoring Location M-001. (CFR 133.101(j))
- d. **Acute Toxicity.** There shall be no acute toxicity in the effluent when discharging to receiving waters, as measured at Monitoring Locations M-001 to M-013. The Discharger will be considered in compliance with this limitation when the survival of aquatic organisms in a 96-hour bioassay of undiluted waste complies with the following:
- Minimum for any one bioassay: 70 percent survival
 - Median for any three consecutive bioassays: at least 90 percent survival

Compliance with the three sample median shall be determined at each monitoring location by calculating the median percent survival of the three most recent consecutive samples meeting all test acceptability criteria collected from Monitoring Locations M-

¹ Mass-based effluent limitations for dry weather conditions are based on the ADWF flow of 21.34 mgd.

² During wet weather conditions when the average weekly or average monthly influent flow exceeds 21.34 mgd, mass-based effluent limitations are calculated based on the monthly and weekly wet weather design flows of 47.3 MGD and 64 MGD, respectively.

001 to M-013. All effluent samples shall be collected in accordance with methods described in the MRP.

- e. **Effluent Limitations for Protection of Freshwater Aquatic Life:** During periods of discharge to receiving waters, representative samples of advanced treated wastewater collected at Monitoring Locations M-001 to M-013 shall not contain constituents in excess of the following limits:

Table 7. Effluent Limitations for Protection of Aquatic Life

.Parameter	Units	Effluent Limitations ³				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Copper	µg/L	SEE ATTACHMENT E-2	--	SEE ATTACHMENT E-2	--	--
Lead	µg/L	SEE ATTACHMENT E-3	--	SEE ATTACHMENT E-3	--	--
Nickel	µg/L	SEE ATTACHMENT E-4	--	SEE ATTACHMENT E-4	--	--
Cyanide	µg/L	3.05	--	9.23	--	--

- f. **Effluent Limitations for Protection of Human Health:** During periods of discharge to receiving waters, representative samples of advanced treated wastewater collected at Monitoring Locations M-001 to M-013 shall not contain constituents in excess of the following limits:

Table 8. Effluent Limitations for Protection of Human Health

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Nitrate ⁴	mg/L as N	10.0	--	---	--	--

- g. **Effluent Limitations for Biostimulatory Substances for Compliance with Narrative Objective.** The Regional Board plans to develop and adopt total maximum daily loads (TMDLs) for nitrogen and phosphorus which will specify wasteload allocations (WLAs) for point sources and load allocations (LA) for non-point sources, as appropriate. Following the adoption of these TMDLs by the Regional Water Board, this Order will be issued with final QBELs based on applicable WLAs. Alternatively, in the absence of a

³ Effluent limitations for copper, lead, and nickel are for the total recoverable metal fraction and are determined using formulas that are based on the hardness of the receiving water at the time the discharge is sampled.

⁴ If, as a result of a nutrient TMDL for the Laguna de Santa Rosa, a WLA for nitrate or total nitrogen is numerically lower than 10.0 mg/l (as N), then the final QBELs for nitrate will be determined by an approved TMDL for the Laguna de Santa Rosa or will be zero (i.e., “no net loading”).

TMDL at the end of the compliance schedule authorized by this Order, the final effluent limitation for nitrogen and phosphorus will be zero, or no net loading⁵.

2. Interim Effluent Limitations

- a. Beginning on the effective date of this Order and ending no later than April 30, 2010, the discharge of advanced treated wastewater shall maintain compliance with the following limitations at Monitoring Locations M-001 to M-013, as described in the attached MRP (Attachment E). These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in this Order.

Table 9. Effluent Limitations for Protection of Aquatic Life

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Copper	µg/L	16.3	--	--	--	--
Lead	µg/L	5.6	--	--	--	--
Cyanide	µg/L	14.3	--	--	--	--

- b. Beginning on the effective date of this Order and ending no later than November 9, 2011, the discharge of advanced treated wastewater shall maintain compliance with the following limitations at Monitoring Locations M-001 to M-013, as described in the attached MRP (Attachment E). These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in section IV.A.1.g of this Order.

Table 10. Effluent Limitations for Protection of Human Health

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Nitrate	mg/L as N	12.9	--	---	--	--

- c. Beginning on the effective date of this Order and ending no later than November 9, 2011, the discharge of advanced treated wastewater shall maintain compliance with the following limitations at Monitoring Locations M-001 to M-013, as described in the attached MRP (Attachment E). These interim effluent limitations shall apply in lieu of

⁵ A "no net loading" effluent limit may be met by: 1) reducing the effluent concentration below detectable levels through source control and/or treatment; 2) reducing loads through recycling/reclamation; and/or 3) reducing loads elsewhere in the watershed by an amount at least equal to the amount discharged (and of equivalent bioavailability) through an approved offset program.

the corresponding final effluent limitations specified for the same parameters during the time period indicated in this Order.

Table 11. Effluent Limitations for Biostimulatory Substances

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Phosphate	mg/L	3.1	--	---	--	--
Total Kjeldahl Nitrogen	mg/L	3.0	--	---	--	--

- d. Beginning on the effective date of this Order and ending no later than November 9, 2011, the mass emission rate of the discharge of Total Nitrogen⁶ shall not exceed 270,336 lbs in any discharge season. The mass emission rate of the discharge of Total Phosphate shall not exceed 48,142 lbs in any discharge season. These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for biostimulants during the time period indicated in Section IV.A.1 of this Order.

B. Land Discharge Specifications

This section of the standardized Order template is not applicable to the Santa Rosa Subregional Water Reclamation System as treated wastewater is not discharged or applied to land for the purpose of disposal.

C. Reclamation Specifications

In addition to the following, the Discharger shall comply with Water Reclamation requirements and Provisions contained in Attachment G of this Order.

- Filtration Rate.** The rate of filtration through the tertiary filters shall not exceed 5 gallons per minute per square foot of surface area.
- Turbidity.** The effluent from the filtration system shall at all times be filtered such that the filtered effluent meets the following specifications prior to discharge to the disinfection unit:
 - An average of 2 Nephelometric Turbidity Units (NTU) during any 24-hour period;
 - 5 NTU more than 5 percent of the time during any 24-hour period; and
 - 10 NTU at any time.
- Reclamation Capacity.** The Discharger shall maintain, at a minimum, a total reclamation capacity of 4,015 million gallons for Geysers recharge, and maintain the capability to irrigate 2,590 million gallons per year at 21.34 mgd average dry weather flow.

⁶ Total Nitrogen means the sum of ammonia-nitrogen, nitrate-nitrogen, nitrite-nitrogen, and organic nitrogen.

4. **Reclamation Alternatives.** The Discharger shall utilize all reasonable alternatives for reclamation. "Reasonable alternatives" for reclamation include, but are not limited to: full use of existing irrigation capacity; seeking additional irrigation capacity to the extent that storage capacity increases; and sending additional discharges to the Geysers steamfields during extreme weather conditions.
5. **Reclamation Operation.** The Discharger shall operate recycled water storage and disposal according to the *Geysers Discharge Management Plan*, submitted in October 2003 and approved by the Executive Officer, as may be amended and subsequently approved by the Executive Officer, from time to time.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. Compliance with receiving water limitations shall be measured at monitoring locations described in the MRP (Attachment E). The discharge shall not cause the following:

1. The discharge shall not cause the dissolved oxygen concentration of the receiving waters to be depressed below 7.0 mg/l. In the event that the receiving waters are determined to have dissolved oxygen concentration of less than 7.0 mg/l, the discharge shall not depress the dissolved oxygen concentration below the existing level.
2. The discharge shall not cause the pH of the receiving waters to be depressed below 6.5 nor raised above 8.5. Within this range, the discharge shall not cause the pH of the receiving waters to be changed at any time more than 0.5 units from that which occurs naturally. If the pH of the receiving water is less than 6.5, the discharge shall not cause a further depression of the pH of the receiving water. If the pH of the receiving water is greater than 8.5, the discharge shall not cause a further increase in the pH of the receiving water.
3. The discharge shall not cause the turbidity of the receiving waters to be increased more than 20 percent above naturally occurring background levels.
4. The discharge shall not cause the receiving waters to contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.
5. The discharge shall not cause the receiving waters to contain taste or odor producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, that cause nuisance, or that adversely affect beneficial uses.
6. The discharge of waste shall not cause coloration of the receiving waters that causes nuisance or adversely affects beneficial uses.

7. The discharge shall not cause bottom deposits in the receiving waters to the extent that such deposits cause nuisance or adversely affect beneficial uses.
8. The discharge shall not cause or contribute to receiving water concentrations of biostimulants that promote objectionable aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses of the receiving waters.
9. The discharge shall not cause the receiving waters to contain toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in humans, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods as specified by the Regional Water Board.
10. The following temperature limitations apply to the discharge to the receiving waters:
 - a. When the receiving water is below 58°F, the discharge shall cause an increase of no more than 4°F in the receiving water, and shall not increase the temperature of the receiving water beyond 59°F. No instantaneous increase in receiving water temperature shall exceed 4°F at any time.
 - b. When the receiving water is between 59°F and 67°F, the discharge shall cause an increase of no more than 1°F in the receiving water. No instantaneous increase in receiving water temperature shall exceed 1°F at any time.
 - c. When the receiving water is above 68°F, the discharge shall not cause an increase in temperature of the receiving water.
11. The discharge shall not cause an individual pesticide or combination of pesticides to be present in concentrations that adversely affect beneficial uses. The discharge must not cause bioaccumulation of pesticide, fungicide, wood treatment chemical, or other toxic pollutant concentrations in bottom sediments or aquatic life to levels which are harmful to human health. The discharge shall not cause the receiving waters to contain concentrations of pesticides in excess of the limiting concentrations set forth in Table 3-2 of the Basin Plan.
12. The discharge must not cause the receiving waters to contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water that cause nuisance or that otherwise adversely affect beneficial uses.
13. This discharge must not cause a violation of any applicable water quality standard for receiving waters adopted by the Regional Water Board or the State Water Board as required by the Federal CWA and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or

amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such more stringent standards.

14. The discharge shall not cause concentrations of chemical constituents to occur in excess of limits specified in Table 3-2 of the Basin Plan or in excess of more stringent Maximum Contaminant Levels (MCLs) established for these pollutants in Title 22, Division 4, Chapter 15, Articles 4 and 5.5 of the CCR.

B. Groundwater Limitations

1. The collection, storage, and use of wastewater or recycled water shall not cause or contribute to a statistically significant degradation of groundwater quality.
2. The collection, storage, and use of wastewater shall not cause groundwater to contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

VI. PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions.** The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.
2. **Regional Water Board Standard Provisions.** There are no applicable Regional Water Board standard provisions.

B. Monitoring and Reporting Program Requirements

1. The Discharger shall comply with the Monitoring and Reporting Program, and future revisions thereto, in Attachment E of this Order.
2. The Discharger may submit a proposal to monitor receiving water at locations different than receiving water locations specified in section VIII of the MRP. The proposal must be received by the Executive Officer within 180 days of the effective date of this Order and specify monitoring locations that are acceptable to the Executive Officer for the purpose of demonstrating compliance with this Order. The Executive Officer will inform the Discharger within 90 days after receipt of the proposal whether the alternative monitoring locations are acceptable. In the interim, the Discharger shall comply with interim receiving water monitoring requirements using interim receiving water monitoring locations, as specified in Attachment E-5 of the MRP. If an acceptable alternative proposal is not timely received and approved by the Executive Officer, the downstream receiving water monitoring locations specified in the MRP (section VIII) shall replace interim receiving water monitoring locations in Attachment E-5 effective immediately.

C. Special Provisions

1. Reopener Provisions

- a. **Standards Revisions.** If applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments thereto, the Regional Water Board may reopen this Order and make modifications in accordance with such revised standards.
- b. **Reasonable Potential.** The Regional Water Board may modify, or revoke and reissue, this Order if present or future investigations demonstrate that the discharge governed by this Order has the reasonable potential to cause or contribute to excursions above any applicable priority pollutant criterion or objective or adversely impacting water quality and/or the beneficial uses of receiving waters.
- c. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on that objective.
- d. **303(d)-Listed Pollutants.** If an applicable TMDL program is adopted, this Order may be reopened and the effluent limitations for the pollutant or pollutants that are the subject of the TMDL modified or an effluent concentration limitation imposed to conform this Order to the TMDL requirements. If the Regional Water Board determines that a voluntary offset program is feasible for and desired by the Discharger, then this Order may be reopened to reevaluate the effluent limitations for the pollutant or pollutants that are the subject of the TMDL and, if appropriate, to incorporate provisions recognizing the Discharger's participation in an offset program.
- e. **Filter Loading Rate.** The Discharger is participating in a study being conducted by the California Department of Health Services (DHS) regarding filter loading rates for filtered wastewater. This Order may be reopened and modified to incorporate a revised filter loading rate in the event that DHS revises Title 22 regulations to require a different filter loading rate as a result of the study.
- f. **Special Studies.** If a water effect ratio, mixing zone, or other water quality study provides new information and a basis for determining that a permit condition or conditions should be modified, the Regional Water Board may reopen this Order and make modifications in accordance with 40 CFR 122.62.
- g. **Alternative Final Limitations for Biostimulants.** If the Discharger completes a special study justifying alternative final numerical limitations for biostimulants that demonstrates that the discharge, if alternative limitations are allowed, will not cause, or have the potential to cause or contribute to an excursion of applicable water quality objectives for

biostimulants in the Laguna de Santa Rosa or its tributaries, the Regional Water Board may reopen this Order and make modifications in accordance with 40 CFR 122.62.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

- a. **Whole Effluent Toxicity.** In addition to a limitation for whole effluent acute toxicity, the Monitoring and Reporting Program (MRP) of this Order requires routine monitoring for whole effluent chronic toxicity to determine compliance with the Basin Plan's narrative water quality objective for toxicity. As established by the MRP, if either the acute toxicity effluent limitation or a chronic toxicity monitoring trigger of 1.0 TU_c is exceeded, the Discharger shall conduct accelerated toxicity monitoring. Results of accelerated toxicity monitoring will indicate a need to conduct a Toxicity Reduction Evaluation (TRE), if toxicity persists; or it will indicate that a return to routine toxicity monitoring is justified because persistent toxicity has not been identified by accelerated monitoring. TREs shall be conducted in accordance with the TRE Workplan prepared by the Discharger pursuant to Section VI. C. 2. b of this Order, below.
- b. **Toxicity Reduction Evaluations (TRE) Workplan.** The Discharger shall prepare and submit to the Regional Water Board Executive Officer a TRE workplan within **180 days of the effective date of this Order**. This plan shall be reviewed and updated as necessary in order to remain current and applicable to the discharge and discharge facilities. The workplan shall describe the steps the Discharger intends to follow if toxicity is detected, and should include, at least the following items:
 - i. A description of the investigation and evaluation techniques that would be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency.
 - ii. A description of the facility's methods of maximizing in-house treatment efficiency and good housekeeping practices.
 - iii. If a toxicity identification evaluation (TIE) is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor).
- c. **Toxicity Reduction Evaluations (TRE).** The TRE shall be conducted in accordance with the following:
 - i. The TRE shall be initiated within 30 days of the date of completion of the accelerated monitoring test, required by Section V of the MRP, observed to exceed either the acute or chronic toxicity parameter.
 - ii. The TRE shall be conducted in accordance with the Discharger's workplan.
 - iii. The TRE shall be in accordance with current technical guidance and reference material including, at a minimum, the USEPA manual EPA/833B-99/002.

- iv. The TRE may end at any stage if, through monitoring results, it is determined that there is no longer consistent toxicity.
 - v. The Discharger may initiate a TIE as part of the TRE process to identify the cause(s) of toxicity. As guidance, the Discharger shall use the USEPA acute and chronic manuals, EPA/600/6-91/005F (Phase I), EPA/600/R-92/080 (Phase II), and EPA-600/R-92/081 (Phase III).
 - vi. As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the source(s) and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with chronic toxicity parameters.
 - vii. Many recommended TRE elements accompany required efforts of source control, pollution prevention, and storm water control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements of recommendations of such programs may be acceptable to comply with requirements of the TRE.
 - viii. The Regional Water Board recognizes that chronic toxicity may be episodic and identification of a reduction of sources of chronic toxicity may not be successful in all cases. Consideration of enforcement action by the Regional Water Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.
- d. **Groundwater Monitoring Program.** The Discharger shall prepare and submit for approval by Regional Water Board Executive Officer a Groundwater Monitoring Program for its Water Reclamation System **within 180 days of the effective date of this Order.** The Program shall be of sufficient scope to demonstrate that the discharge of treated wastewater to the Discharger's land irrigation system is in compliance with this Order.
- e. **Storage Pond Leak Monitoring Program.** The Discharger shall prepare and submit for approval by Regional Water Board Executive Officer a Storage Pond Leak Monitoring Program **within 180 days of the effective date of this Order.** The Program shall be of sufficient scope to demonstrate that storage of treated wastewater within the Subregional System is not degrading groundwater quality or causing or contributing to excursions of applicable water quality objectives in groundwater or surface water.

3. Best Management Practices and Pollution Prevention

- a. **Pollutant Minimization Program.** The Discharger shall, as required by the Executive Officer, prepare a Pollutant Minimization Program in accordance with section 2.4.5.1 of the SIP when there is evidence (e.g., sample results reported as Detected, but Not

Quantified (DNQ) when the effluent limitation is less than the Method Detection Limit (MDL), sample results from analytical methods more sensitive than those methods included in the permit, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either:

- i. A sample result is reported as DNQ and the effluent limitation is less than the Reporting Limit (RL); or
- ii. A sample result is reported as Not Detected (ND) and the effluent limitation is less than the MDL.

4. Compliance Schedules

a. Compliance Schedule for Final Effluent Limitations for Copper and Lead

- i. **By June 1, 2007**, the Discharger shall complete an evaluation to determine potential sources of copper and lead.
- ii. **By December 1, 2007**, the Discharger shall complete an evaluation of pretreatment local limits for copper and lead and, if appropriate, revise local limits, implemented pursuant to its Pretreatment program, based on identified sources.
- iii. **By June 1, 2008**, the Discharger shall update its source control program, if necessary, to reflect any revision local limits. This step will include providing a period of time to allow industrial users to come into compliance with their new limits.
- iv. **By May 31, 2009**, the Discharger shall evaluate compliance with new local limits and evaluate whether further copper or lead reductions are necessary.
- v. **By December 1, 2009**, the Discharger shall, if necessary, complete an engineering treatment feasibility studies examining the feasibility, costs and benefits of different treatment options that may be required to remove copper and lead.
- vi. **By May 1, 2010**, the Discharger shall comply with the final effluent limitations for copper and lead. On July 6, 2005, the Discharger submitted a compliance schedule justification for these constituents. The compliance schedule justification included all items specified in Paragraph 3, items (a) through (d), of section 2.1 of the SIP. As this compliance schedule is greater than one year, the Discharger shall submit semi-annual progress reports in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.)

b. Compliance Schedule for Final Effluent Limitations for Cyanide

- i. **By November 1, 2007**, the Discharger shall complete an evaluation of analytical methodology for cyanide.

- ii. **By November 1, 2007**, the Discharger shall complete an evaluation of the effect of thiocyanate in its influent and its contribution to total cyanide in its effluent.
- iii. **By November 1, 2008**, the Discharger shall complete an evaluation to determine potential industrial users of thiocyanate.
- iv. **By November 1, 2009**, the Discharger shall, if necessary, develop and implement a source control program to control thiocyanate in its influent.
- v. **By May 1, 2010**, the Discharger shall comply with the final effluent limitations for cyanide. On July 6, 2005, the Discharger submitted a compliance schedule justification for these constituents. The compliance schedule justification included all items specified in Paragraph 3, items (a) through (d), of section 2.1 of the SIP. As this compliance schedule is greater than one year, the Discharger shall submit semi-annual progress reports in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.)

c. Compliance Schedule for Final Effluent Limitations for Nitrate

- i. **By May 20, 2007**, the Discharger shall submit a written progress report summarizing 1) the status of the preliminary treatment plant improvement evaluations, the treatment plant optimization evaluation, and the mixing zone evaluation, and 2) the status of source control efforts to reduce nitrate loading in the Laguna de Santa Rosa.
- ii. **By February 20, 2008**, the Discharger shall submit 1) a report describing the status of source control efforts to reduce nitrate loading in the Laguna de Santa Rosa, 2) the findings of the treatment plant improvement and optimization evaluations and the preliminary mixing zone evaluation, and 3) any additional efforts to meet final limitations.
- iii. **By September 20, 2008**, the Discharger shall submit a written progress report discussing its progress in complying with final effluent limitations. A progress report shall be submitted by September 20 of each year thereafter, until September 20, 2011. The Discharger shall comply with final effluent limitations for nitrate by **November 9, 2011**.

d. Compliance Schedule for Final Effluent Limitations for Biostimulatory Substances

- i. **By September 20 of each year, beginning in 2007**, the Discharger shall submit a written progress report on its progress in complying with final effluent limitations for biostimulatory substances. This annual report shall include, but not be limited to,
 - 1) the identification of feasible treatment improvements, water recycling efforts, stormwater programs, pretreatment limitations, nonpoint source assistance programs, and other water diversion programs, such as the Geysers Recharge Project, that the City has undertaken during the previous 12 months to reduce the effluent nitrogen concentration and mass nutrient loading to the Laguna de Santa Rosa.

- 2) A demonstration that the activities and programs identified above have resulted in a measurable reduction in nutrient loading to the Laguna de Santa Rosa.
- 3) Additional activities planned by the City to reduce nutrient loading in the Laguna for the coming year.

5. Operation and Maintenance Specifications

- a. The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with this Order. Proper operation and maintenance includes adequate laboratory quality control and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Discharger only when necessary to achieve compliance with the conditions of this Order. [40 CFR 122.41(e)]
- b. The Discharger shall maintain an updated Operation and Maintenance (O&M) Manual for the Facility. The Discharger shall update the O&M Manual, as necessary, to conform with changes in operation and maintenance of the Facility. The O&M Manual shall be readily available to operating personnel onsite. The O&M Manual shall include the following:
 - i. Description of the treatment plant table of organization showing the number of employees, duties and qualifications and plant attendance schedules (daily, weekends and holidays, part-time, etc). The description should include documentation that the personnel are knowledgeable and qualified to operate the treatment facility so as to achieve the required level of treatment at all times.
 - ii. Detailed description of safe and effective operation and maintenance of treatment processes, process control instrumentation and equipment.
 - iii. Description of laboratory and quality assurance procedures.
 - iv. Process and equipment inspection and maintenance schedules.
 - v. Description of safeguards to assure that, should there be reduction, loss, or failure of electric power, the Discharger will be able to comply with requirements of this Order.
 - vi. Description of preventive (fail-safe) and contingency (response and cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. These plans shall identify the possible sources (such as loading and storage areas, power outage, waste treatment unit failure, process equipment failure, tank and piping failure) of accidental discharges, untreated or partially treated waste bypass, and polluted drainage.

6. Special Provisions for Municipal Facilities (POTWs Only)

a. Wastewater Collection Systems

i. Statewide General WDRs for Sanitary Sewer Systems

On May 2, 2006, the State Water Board adopted State Water Board Order 2006-0003, a Statewide General WDRs for Sanitary Sewer Systems. The Discharger shall be subject to the requirements of Order 2006-0003 and any future revisions thereto. Order 2006-0003 requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the General WDRs within six months. Therefore, **by November 2, 2006**, the Discharger shall apply for coverage under State Water Board Order 2006-0003 for operation of its wastewater collection system.

In addition to the coverage obtained under Order 2006-0003, the Discharger's collection system is also part of the treatment system that is subject to this Order. As such, pursuant to federal regulations, the Discharger must properly operate and maintain its collection system [40 CFR section 122.41(e)], report any non-compliance [40 CFR section 122.41(l)(6) and (7)], and mitigate any discharge from the collection system in violation of this Order [40 CFR. section 122.41(d)].

ii. Sanitary Sewer Overflows

The written report requirements as specified below in this subsection shall terminate when the Discharger obtains coverage under Order No. 2006-0003-DWQ and commences electronic and/or telefax reporting of sanitary sewer overflows pursuant to Provision D.15 and General Monitoring and Reporting Requirement G.2 of Order No. 2006-0003-DWQ and Monitoring and Reporting Program No. 2006-0003-DWQ. Oral reporting⁷ of SSOs as specified below in this subsection shall continue through the term of this Order.

Sanitary Sewer Overflows (SSOs) shall be reported orally and in writing to the Regional Water Board staff in accordance with the following:

- a. SSOs in excess of 1,000 gallons or any SSO that results in sewage reaching surface waters, or if it is likely that more than 1,000 gallons has escaped the collection system, shall be reported immediately by telephone. A written description of the event shall be submitted with the monthly monitoring report.

⁷ Oral reporting means direct contact with a Regional Water Board staff person. The oral report may be given in person or by telephone. After business hours, oral contact must be made by calling the State Office of Emergency Services or the Regional Water Board spill officer.

- b. SSOs that result in a sewage spill between 100 gallons and 1,000 gallons that does not reach a waterway shall be reported orally within 24 hours. A written description of the event shall be submitted with the next monthly monitoring report.
- c. Information to be provided orally includes:
 - 1) Name and contact information of caller.
 - 2) Date, time and location of SSO occurrence.
 - 3) Estimates of spill volume, rate of flow, and spill duration.
 - 4) Surface water bodies impacted.
 - 5) Cause of spill.
 - 6) Cleanup actions taken or repairs made.
 - 7) Responding agencies.
- d. Information to be provided in writing includes:
 - 1) Information provided in verbal notification.
 - 2) Other agencies notified by phone.
 - 3) Detailed description of cleanup actions and repairs taken.
 - 4) Description of actions that will be taken to minimize or prevent future spills.

b. Pretreatment of Industrial Waste

- i. The Discharger shall be responsible for the performance of all pretreatment requirements contained in 40 CFR Part 403 and shall be subject to enforcement actions, penalties, fines and other remedies by the USEPA or other appropriate parties as provided in the CWA, as amended (33 USC 1351 et seq.). The Discharger shall implement and enforce its approved Wastewater Treatment Facility (WWTF) Pretreatment Program. The Discharger's approved WWTF Pretreatment Program is hereby made an enforceable condition of this Permit. USEPA may initiate enforcement action against an industrial user for noncompliance with applicable standards and requirements as provided in the CWA.
- ii. The Discharger shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d) and 402(d) of the CWA. The Discharger shall cause industrial users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of the discharge.
- iii. The Discharger shall perform the pretreatment functions as required in 40 CFR Part 403 including, but not limited to:
 - a. Implement the necessary legal authorities as provided in 40 CFR 403.8(f)(1);
 - b. Enforce the pretreatment requirements under 40 CFR 403.5 and 403.6;
 - c. Implement the programmatic functions as provided in 40 CFR 403.8(f)(2); and
 - d. Provide the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403.8(f)(3).

c. Sludge Disposal and Handling Requirements

- i. Sludge, as used in this document, means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screenings generated during preliminary treatment. Biosolids refers to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities.
- ii. All collected sludges and other solid waste removed from liquid wastes shall be removed from screens, sumps, ponds, and tanks as needed to ensure optimal plant operation and disposed of in accordance with applicable federal and state regulations.
- iii. The use and disposal of biosolids shall comply with all the requirements in 40 CFR 503, which are enforceable by the USEPA, not the Regional Water Board. If during the life of this Order, the State accepts primacy for implementation of 40 CFR 503, the Regional Water Board may also initiate enforcement where appropriate.
- iv. Sludge or biosolids that are disposed of in a municipal solid waste landfill or used as landfill daily cover shall meet the applicable requirements of 40 CFR 258. In the annual self-monitoring report, the Discharger shall include the amount of sludge or biosolids disposed of, and the landfill(s) which received the sludge or biosolids.
- v. The beneficial use of biosolids by application to land as soil amendment is not covered or authorized by this Permit. Class B biosolids that are applied to land as soil amendment by the Discharger within the North Coast Region shall comply with State Water Board Water Quality Order No. 2000-10-DWQ (General Waste Discharge Requirements for the Discharge of Biosolids to Land as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities (General Order) or other WDRs issued by the Regional Water Board.
- vi. The Discharger shall take all reasonable steps to prevent and minimize any sludge use or disposal in violation of this Order that has a likelihood of adversely affecting human health or the environment.
- vii. Solids and sludge treatment, storage, and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, and shall not result in groundwater contamination.
- viii. The solids and sludge treatment and storage site shall have facilities adequate to divert surface water runoff from adjacent areas, to protect the boundaries of the site from erosion, and to prevent drainage from the treatment and storage site. Adequate protection is defined as protection from at least a 100-year storm.

- viii The discharge of sewage sludge, biosolids and other waste solids shall not cause waste material to be in a position where it is, or can be, conveyed from the treatment and storage sites and deposited in the waters of the state.
- d. Discharge Notification.** The Discharger shall notify the Regional Water Board orally in the event that discharge to surface waters is expected to occur when the flow in the Russian River as measured at Hacienda Bridge (USGS gauge No. 11-4670.00) has not reached 1,000 cubic feet per second.
- e. Operator Certification.** Supervisors and operators of municipal WWTFs shall possess a certificate of appropriate grade in accordance with Title 23, CCR, section 3680. The State Water Board may accept experience in lieu of qualification training. In lieu of a properly certified WWTF operator, the State Water Board may approve use of a water treatment plant operator of appropriate grade certified by the DHS where water reclamation is involved
- f. Adequate Capacity.** Whenever a WWTF will reach capacity within four years, the Discharger shall notify the Regional Water Board. A copy of such notification shall be sent to appropriate local elected officials, local permitting agencies, and the press. Factors to be evaluated in assessing reserve capacity shall include, at a minimum, (1) comparison of the wet weather design flow with the highest daily flow, and (2) comparison of the average dry weather design flow with the lowest monthly flow. The Discharger shall demonstrate that adequate steps are being taken to address the capacity problem. The Discharger shall submit a technical report to the Regional Water Board showing how flow volumes will be prevented from exceeding capacity, or how capacity will be increased, within 120 days after providing notification to the Regional Water Board, or within 120 days after receipt of Regional Water Board notification, that the WWTF will reach capacity within four years. The time for filing the required technical report may be extended by the Regional Water Board. An extension of 30 days may be granted by the Executive Officer, and longer extensions may be granted by the Regional Water Board itself. [CCR Title 23, Section 2232]

VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in Section IV of this Order will be determined as specified below:

A. General.

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in the MRP and Appendix A of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

B. Multiple Sample Data Reduction.

When determining compliance with an AMEL for priority pollutants and more than one sample result is available in a month, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of “Detected, but Not Quantified” (DNQ) or “Not Detected” (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

1. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
2. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

C. Average Monthly Effluent Limitation (AMEL).

When less than daily monitoring is required, the monthly average shall be determined by summing the daily values and dividing by the number of days during the calendar month when monitoring occurred. If only one sample is collected in a calendar month, the value of the single sample shall constitute the monthly average.

If the average of daily discharges over a calendar month exceeds the AMEL for a given parameter, the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). The average of daily discharges over the calendar month that exceeds the AMEL for a parameter will be considered out of compliance for that month only. For purposes of Mandatory Minimum Penalties, a violation of an AMEL will be considered as one violation. Depending on the nature

of the violation, the Regional Water Board may, however, pursue discretionary civil penalties for the remaining days of violation. If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Discharger will be considered out of compliance for that calendar month. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

D. Average Weekly Effluent Limitation (AWEL).

When less than daily monitoring is required, the weekly average shall be determined by summing the daily values and dividing by the number of days during the calendar week when monitoring occurred. If only one sample is collected in a calendar week, the value of the single sample shall constitute the weekly average. For any one calendar week during which no sample is taken, no compliance determination can be made for that calendar week.

If the average of daily discharges over a calendar week exceeds the AWEL for a given parameter, the Discharger will be considered out of compliance for each day of that week for that parameter, resulting in 7 days of non-compliance. The average of daily discharges over the calendar week that exceeds the AWEL for a parameter will be considered out of compliance for that week only. For purposes of Mandatory Minimum Penalties, a violation of an AWEL will be considered as one violation. Depending on the nature of the violation, the Regional Water Board may, however, pursue discretionary civil penalties for the remaining days of violation. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the Discharger will be considered out of compliance for that calendar week. For any one calendar week during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week.

E. Maximum Daily Effluent Limitation (MDEL).

If a daily discharge exceeds the MDEL for a given parameter, the Discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

F. Instantaneous Minimum Effluent Limitation.

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation).

G. Instantaneous Maximum Effluent Limitation.

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately

(e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ): is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = $\mu = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL): the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL): the highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Bioaccumulative: pollutants are those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Coefficient of Variation (CV): is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Daily Discharge: Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ): are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

Effluent Concentration Allowance (ECA): is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in

USEPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Estimated Chemical Concentration: is the estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Instantaneous Maximum Effluent Limitation: the highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation: the lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Flow is the maximum flow sample of all samples collected in a calendar day.

Maximum Daily Effluent Limitation (MDEL) means the highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median: is the middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the $n/2$ and $n/2+1$).

Method Detection Limit (MDL): is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 CFR Part 136, Appendix B, revised as of May 14, 1999.

Minimum Level (ML): is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Mixing Zone: is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

Not Detected (ND): are those sample results less than the laboratory's MDL.

Pollutant Minimization: means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses.

Pollution Prevention: means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in CWC Section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the SWRCB or RWQCB.

Reporting Level (RL): is the ML corresponding to an approved analytical method for reporting a sample result that is selected either from Appendix 4 of the SIP by the Regional Water Board in accordance with Section 2.4.2 of the SIP or established in accordance with Section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

ATTACHMENT B – TOPOGRAPHIC MAP

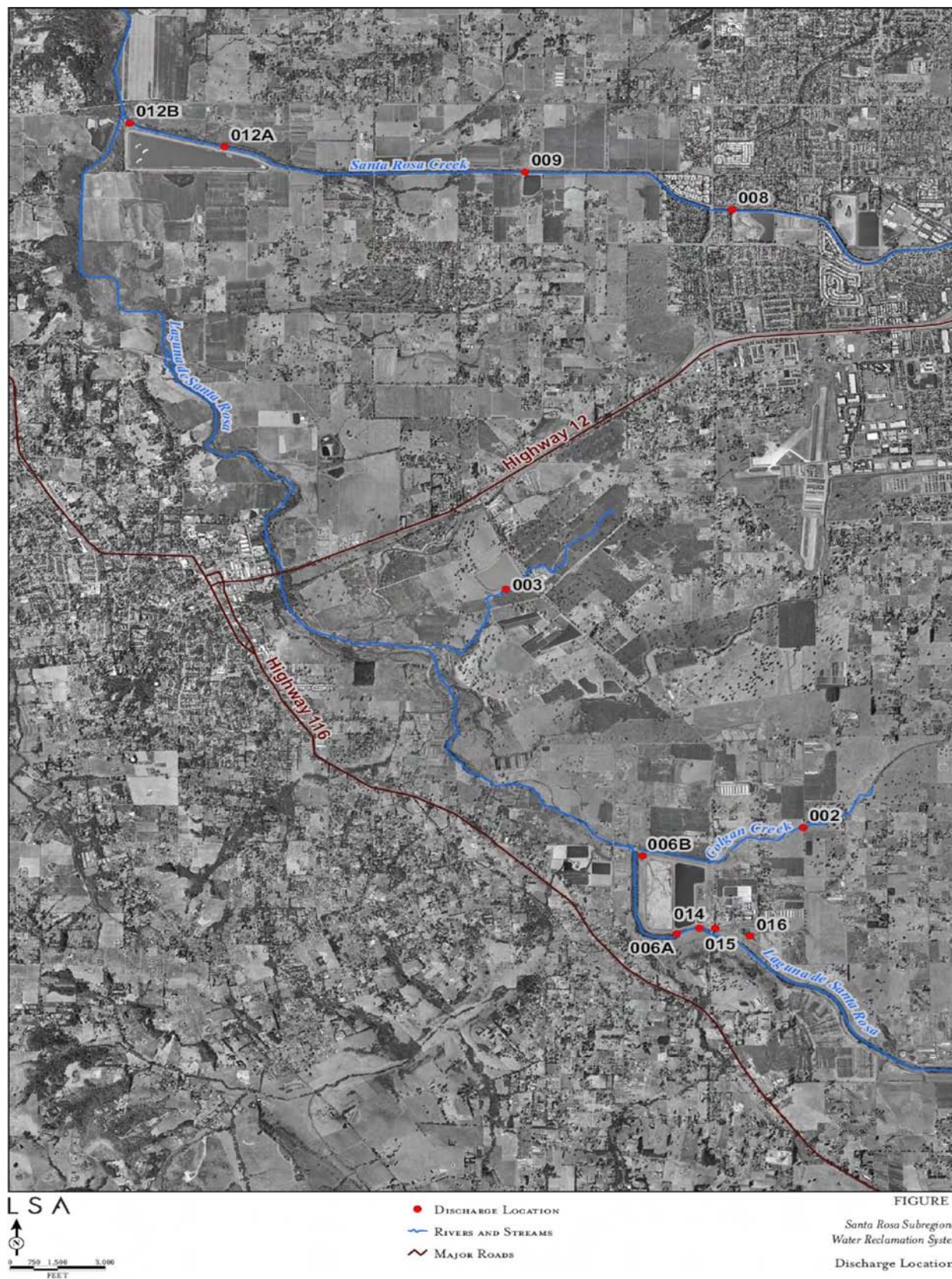




FIGURE
LAGUNA WWTP PROCESS SCHEMATIC
SANTA ROSA SUBREGIONAL WATER RECLAMATION SYSTEM
CH2MHILL

ATTACHMENT C - FLOW SCHEMATIC

ATTACHMENT D – FEDERAL STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code (CWC) and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application [40 CFR §122.41(a)].
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement [40 CFR §122.41(a)(1)].

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order [40 CFR §122.41(c)].

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment [40 CFR §122.41(d)].

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order [40 CFR §122.41(e)].

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges [40 CFR §122.41(g)].

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations [40 CFR §122.5(c)].

F. Inspection and Entry

The Discharger shall allow the Regional Water Quality Control Board (Regional Water Board), State Water Resources Control Board (State Water Board), United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to [40 CFR §122.41(i)] [CWC 13383(c)]:

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order [40 CFR §122.41(i)(1)];
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order [40 CFR §122.41(i)(2)];
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order [40 CFR §122.41(i)(3)];
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the CWC, any substances or parameters at any location [40 CFR §122.41(i)(4)].

G. Bypass

1. Definitions
 - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility [40 CFR §122.41(m)(1)(i)].
 - b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production [40 CFR §122.41(m)(1)(ii)].
2. Bypass not exceeding limitations – The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3 and I.G.5 below [40 CFR §122.41(m)(2)].

3. Prohibition of bypass – Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless [40 CFR §122.41(m)(4)(i)]:
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage [40 CFR §122.41(m)(4)(A)];
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance [40 CFR §122.41(m)(4)(B)]; and
 - c. The Discharger submitted notice to the Regional Water Board as required under Standard Provision – Permit Compliance I.G.5 below [40 CFR §122.41(m)(4)(C)].
4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above [40 CFR §122.41(m)(4)(ii)].
5. Notice
 - a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass [40 CFR §122.41(m)(3)(i)].
 - b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below [40 CFR §122.41(m)(3)(ii)].

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation [40 CFR §122.41(n)(1)].

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review [40 CFR §122.41(n)(2)].

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that [40 CFR §122.41(n)(3)]:
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset [40 CFR §122.41(n)(3)(i)];
 - b. The permitted facility was, at the time, being properly operated [40 CFR §122.41(n)(3)(i)];
 - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) [40 CFR §122.41(n)(3)(iii)]; and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above [40 CFR §122.41(n)(3)(iv)].
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof [40 CFR §122.41(n)(4)].

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition [40 CFR §122.41(f)].

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit [40 CFR §122.41(b)].

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the CWC [40 CFR §122.41(l)(3)] [40 CFR §122.61].

III. STANDARD PROVISIONS – MONITORING

- A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity [40 CFR §122.41(j)(1)].
- B. Monitoring results must be conducted according to test procedures under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise

specified in 40 CFR Part 503 unless other test procedures have been specified in this Order [40 CFR §122.41(j)(4)] [40 CFR §122.44(i)(1)(iv)].

IV. STANDARD PROVISIONS – RECORDS

- A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time [40 CFR §122.41(j)(2)].
- B. Records of monitoring information shall include:
1. The date, exact place, and time of sampling or measurements [40 CFR §122.41(j)(3)(i)];
 2. The individual(s) who performed the sampling or measurements [40 CFR §122.41(j)(3)(ii)];
 3. The date(s) analyses were performed [40 CFR §122.41(j)(3)(iii)];
 4. The individual(s) who performed the analyses [40 CFR §122.41(j)(3)(iv)];
 5. The analytical techniques or methods used [40 CFR §122.41(j)(3)(v)]; and
 6. The results of such analyses [40 CFR §122.41(j)(3)(vi)].
- C. Claims of confidentiality for the following information will be denied [40 CFR §122.7(b)]:
1. The name and address of any permit applicant or Discharger [40 CFR §122.7(b)(1)]; and
 2. Permit applications and attachments, permits and effluent data [40 CFR §122.7(b)(2)].

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order [40 CFR §122.41(h)] [CWC 13267].

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with paragraph (2.) and (3.) of this provision [40 CFR §122.41(k)].

2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA) [40 CFR Section 122.22(a)(3)].
3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above [40 CFR §122.22(b)(1)];
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company (a duly authorized representative may thus be either a named individual or any individual occupying a named position) [40 CFR §122.22(b)(2)]; and
 - c. The written authorization is submitted to the Regional Water Board and the State Water Board. [40 CFR §122.22(b)(3)].
4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and the State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative [40 CFR §122.22(c)].
5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations” [40 CFR §122.22(d)].

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order [40 CFR §122.41(l)(4)].
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices [40 CFR §122.41(l)(4)(i)].
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board [40 CFR §122.41(l)(4)(ii)].
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order [40 CFR §122.41(l)(4)(iii)].

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted **no later than 14 days following each schedule date** [40 CFR §122.41(l)(5)].

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided **orally within 24 hours** from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance [40 CFR §122.41(l)(6)(i)].
2. The following shall be included as information that must be reported within 24 hours under this paragraph [40 CFR §122.41(l)(6)(ii)]:
 - a. Any unanticipated bypass that exceeds any effluent limitation in this Order [40 CFR §122.41(l)(6)(ii)(A)].
 - b. Any upset that exceeds any effluent limitation in this Order [40 CFR §122.41(l)(6)(ii)(B)].

3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours [40 *CFR* §122.41(l)(6)(iii)].

F. Planned Changes

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when [40 *CFR* §122.41(l)(1)]:

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 *CFR* §122.29(b) [40 *CFR* §122.41(l)(1)(i)]; or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in this Order nor to notification requirements under 40 *CFR* Part 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1) [40 *CFR* §122.41(l)(1)(ii)].
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan [40 *CFR* §122.41(l)(1)(iii)].

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements [40 *CFR* §122.41(l)(2)].

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting E.3, E.4, and E.5 at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E [40 *CFR* §122.41(l)(7)].

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information [40 *CFR* §122.41(l)(8)].

VI. STANDARD PROVISIONS – ENFORCEMENT

The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the CWC, including, but not limited to, Sections 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

- A. **Non-Municipal Facilities.** Existing manufacturing, commercial, mining, and silvicultural dischargers shall notify the Regional Water Board as soon as they know or have reason to believe [40 CFR §122.42(a)]:
1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" [40 CFR §122.42(a)(1)]:
 - a. 100 micrograms per liter (µg/L) [40 CFR §122.42(a)(1)(i)];
 - b. 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony [40 CFR §122.42(a)(1)(ii)];
 - c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge [40 CFR §122.42(a)(1)(iii)]; or
 - d. The level established by the Regional Water Board in accordance with 40 CFR §122.44(f) [40 CFR §122.42(a)(1)(iv)].
 2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" [40 CFR §122.42(a)(2)]:
 - a. 500 micrograms per liter (µg/L) [40 CFR §122.42(a)(2)(i)];
 - b. 1 milligram per liter (mg/L) for antimony [40 CFR §122.42(a)(2)(ii)];
 - c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge [40 CFR §122.42(a)(2)(iii)]; or
 - d. The level established by the Regional Water Board in accordance with 40 CFR §122.44(f) [40 CFR §122.42(a)(2)(iv)].
- B. **Publicly-Owned Treatment Works (POTWs).** All POTWs shall provide adequate notice to the Regional Water Board of the following [40 CFR §122.42(b)]:

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to Sections 301 or 306 of the CWA if it were directly discharging those pollutants [40 *CFR* §122.42(b)(1)]; and
2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order [40 *CFR* §122.42(b)(2)].
3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW [40 *CFR* §122.42(b)(3)].

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ATTACHMENT F – FACT SHEET

As described in Section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table 1. Administration Information

WDID	1B830990SON
Discharger	City of Santa Rosa
Name of Facility	Santa Rosa Subregional Water Reclamation Facility
Facility Address	4300 Llano Road
	Santa Rosa, CA 95407
	Sonoma County
Facility Contact, Title and Phone	Miles Ferris, Director of Utilities, (707) 543-3930
Authorized Person to Sign and Submit Reports	Miles Ferris, Director of Utilities
Mailing Address	69 Stony Circle, Santa Rosa, CA 95401
Billing Address	SAME
Type of Facility	POTW
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Y
Reclamation Requirements	Master Reclamation Permit
Facility Permitted Flow	21.34 mgd
Facility Design Flow	21.3 mgd, average dry weather flow
	64 mgd, peak weekly wet weather flow
	47.3 mgd, peak monthly wet weather flow
Watershed	Russian River
Receiving Water	Laguna de Santa Rosa, Colgan Creek, Santa Rosa Creek
Receiving Water Type	Inland Surface Water

- A. The City of Santa Rosa (hereinafter Discharger) is the owner and operator of the Santa Rosa Subregional Water Reclamation Facility (hereinafter Facility), a Publicly Owned Treatment Works (POTW).
- B. The Facility discharges wastewater to the Laguna de Santa Rosa, Colgan Creek, and Santa Rosa Creek, waters of the United States, and is currently regulated by Order No. 2000-03 which was adopted on March 15, 2000 and expires on March 15, 2005.

- C. The Discharger filed a report of waste discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on September 15, 2004. On that date, the Discharger also filed separate reports of waste discharge and submitted applications for both Master Water Reclamation Requirements and biosolids land application WDRs. Supplemental Information received on November 18, 2004, March 14, 2005, March 15, 2005, March 16, 2005, and July 6, 2005, September 22, 2005, February 7, 2006, March 6, 2006, March 8, 2006, and April 4, 2006.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment or Controls

1. The Discharger's wastewater treatment facility (WWTF) treats primarily domestic and industrial wastewater collected via the City of Santa Rosa wastewater collection system. The WWTF also accepts leachate from the Sonoma County Landfill and septage from commercial septage haulers.
2. The Discharger provides wastewater treatment and disposal services for residences, businesses, and industries within the Santa Rosa area and provides service to the communities of Cotati, Rohnert Park, Sebastopol, and the unincorporated South Park County Sanitation District. The WWTF was originally constructed in 1967 and has experienced two major expansions. Expansion in 1977 brought plant treatment capacity to 15 million gallons per day (mgd). Expansion in 1986 brought plant capacity to 18 mgd. The WWTF currently has a design capacity to provide advanced treatment for an average dry flow of 21.3 million gallons per day and to serve an estimated population of 202,500.
3. Treatment consists of raw influent bar screening, grit removal in pre-aeration tanks; sludge and scum removal in primary sedimentation tanks; biological treatment (including nitrogen reduction) with coagulation, flocculation, sedimentation, and clarification; followed by filtration; and ultraviolet light disinfection. Biosolids are thickened by gravity belt thickeners, anaerobically digested, and dewatered in unlined sand drying beds. The dried biosolids are hauled off-site for land application or composted for commercial use.
4. The City's Industrial Waste staff manages a pretreatment program that consists of 1,342 permitted nondomestic dischargers. Thirty of these dischargers are classified as significant industrial users (SIUs), and 20 of the SIUs are categorical industrial users (CIUs). The remaining 1,312 facilities are other regulated nonsignificant nondomestic dischargers that consist of ground water remediation sites, auto shops, restaurants, dry-cleaners, photo processors, and dental offices.
5. The Discharger provides reclaimed water to urban and agricultural use areas. Urban irrigation systems currently are in place at Countryside Estates and Roberts Lake in Rohnert Park and Finley Park in Santa Rosa. Agricultural use areas for which the Discharger provides reclaimed water include approximately 4,300 acres for pasture or fodder crops, 1,400 acres of vineyards, and 120 acres of special-use areas. The Discharger, through a satellite WWTF, the Oakmont Wastewater Treatment Plant (Oakmont WWTP),

distributes water produced at the Oakmont WWTP to the Oakmont Golf Course for golf course irrigation.

6. The Discharger distributes a portion of advanced treated wastewater to the Geysers Recharge project for use by the current owner of the Geysers, Calpine Corporation, for recharge of the steamfields and to generate electricity. The total volume of treated wastewater pumped to the Geysers is stipulated by contract between the Discharger and Calpine Corporation, but a minimum of 4,015 million gallons per year is required to be pumped under conditions of this Order. In 2005, of the 8,060 million gallons of advanced treated wastewater produced by the Discharger, 4,450 million gallons was delivered to the Geysers.
7. This Order authorizes the discharge of advanced treated wastewater from the discharge locations and for the final uses specified in the following section. This Order does not provide permit coverage for the land application of biosolids or the disposal of sludge, solid waste, or biosolids in municipal landfills, or the distribution of recycled water from the Oakwood WWTP, all of which are regulated under separate orders. Master Water Reclamation requirements are included in this Order in an effort to streamline the permitting process for the Discharger's recycled water discharge and because there does not appear to be any tangible benefit to the Discharger or the California Regional Water Quality Control Board, North Coast Region (Regional Water Board) to regulate the discharges under separate permits.

B. Discharge Points and Receiving Waters

1. The WWTF is located at the NE $\frac{1}{4}$ of Section 17, T6N, R8W, MDB&M, as shown in Attachment B, a part of this Order.
2. Advanced treated wastewater is discharged to surface waters from the following locations:

002 Arlington Pond. Discharge is through a pipe to a constructed trapezoidal ditch located approximately 550 feet north of the pond. The ditch replaced a natural swale. The ditch bottom has mixed hydrophilic and upland vegetation and connects directly to Colgan Creek. The upstream receiving water monitoring location is located in Colgan Creek (Station 512), immediately upstream of the point of discharge from the ditch to Colgan Creek.

003 Brown Pond. Discharge is through a pipe onto a rock and concrete rip-rap apron. Flow is directed to a basin that contains cattails and is seasonally ponded. The basin drains to a slight swale, which is, in turn, connected to an unnamed channelized swale. The channelized swale contains wetland vegetation and drains into a wetlands adjacent to the Laguna de Santa Rosa approximately $\frac{1}{2}$ mile southwest of the discharge pipe. The upstream receiving water monitoring location is currently located in the Laguna de Santa Rosa at Todd Road (Station 505), approximately two miles upstream of the wetlands discharge point.

005 LaFranconi Pond. The discharge pipe discharges directly into an unnamed ditch adjacent to LaFranconi Pond and flows in a southwest direction to join an unnamed channelized swale approximately 1,500 feet upstream of the Brown Pond. The upstream receiving water monitoring location for the LaFranconi Pond is currently located in the Laguna de Santa Rosa at Todd Road (Station 505), approximately two miles upstream of the confluence of the channelized swale and the Laguna de Santa Rosa.

006A Meadow Lane Pond D. The discharge is through a pipe into a square concrete flume that empties directly into the ordinary high water mark of the Laguna de Santa Rosa. The discharge is frequently referred to as the “D-Pond Incline Pump,” in reference to the incline pump located at the southeast corner of the D Pond. The upstream receiving water monitoring location is located in the Laguna de Santa Rosa (Station 529), 50-100 feet upstream of the D-Pond incline pump.

006B Meadow Lane Pond D. The discharge is through a 36-inch pipe located at the Northwest corner of the D-Pond. Treated effluent is discharged from the storage pond into a rip-rap and concrete lined trapezoidal flume/ditch that empties into the ordinary high water mark of the Laguna de Santa Rosa. Upstream conditions are currently measured in the Laguna de Santa Rosa, at Monitoring Location (Station 529), which is located approximately 1,500 feet upstream of the discharge location, and in Colgan Creek, at Monitoring Location (Station 528), upstream of the confluence with the Laguna de Santa Rosa.

008 West College Pond 1C. The discharge pipe from the pond discharges directly into the ordinary high water mark of Santa Rosa Creek. The upstream receiving water monitoring location is currently located in Santa Rosa Creek (Station 517), approximately 1,200 feet upstream of the discharge point.

009 Ambrosini Pond. The discharge pipe from the pond discharges directly into the ordinary high water mark of Santa Rosa Creek. The upstream receiving water monitoring location is currently located in Santa Rosa Creek (Station 516), immediately upstream of the discharge point.

012A Delta Pond. The discharge is from the blending valve on the 24-inch pipeline located on mid-way along the North side of Delta Pond to the ordinary high water mark of Santa Rosa Creek. Source water for the blending valve can come from the West College mainline, the Laguna mainline, or can be water that has been stored in Delta Pond.

012B Delta Pond. The 48-inch discharge pipe from the pond discharges directly to the confluence of the Laguna de Santa Rosa and Santa Rosa Creek. Upstream receiving water is monitored at two locations, each approximately 2,000 feet upstream of the effluent discharge point.

014 Meadow Lane A Pond. The discharge pipe discharges directly into a constructed trapezoidal ditch adjacent to the Meadow Lane Pond A. The ditch has a pool of standing water and contains cattails and willows. The upstream receiving water monitoring location

is located in the Laguna de Santa Rosa (Station 530), approximately 100 feet upstream of the Llano Bridge Road.

015 Laguna Treatment Plant. The discharge pipe discharges directly into a square concrete flume that drains to a constructed trapezoidal ditch that conveys only wastewater flow from the WWTF. Flow in the ditch is transported approximately 130 feet where it discharges into the Laguna de Santa Rosa. The upstream receiving water monitoring location is located in the Laguna de Santa Rosa (Station 530), approximately 100 feet upstream of the Llano Bridge Road.

016 Laguna Joint Wetlands. The discharge pipe discharges directly into the constructed wetlands managed by the Discharger. Overflow from the constructed wetlands is controlled by a valved pipe that is opened, as needed, to maintain the water level in the wetland. Water released from the wetlands flows into a constructed, trapezoidal channel the drains directly into the ordinary high water mark of the Laguna de Santa Rosa.

- Surface water discharges occur primarily out of Meadow Lane Pond (06A, 06B) and Delta Pond (012A, 012B), but discharges from the other ponds have occurred infrequently over the term of the previous permit. A summary of the discharge volumes from permitted discharge locations for the 2000-2004 discharge seasons is presented in the following table:

Table 2. Summary of Discharge Volumes from All Discharge Locations for 2000-2004

Location	Average Daily Discharge	Minimum Daily Discharge	Maximum Daily Discharge	Avg. Number of Months Discharging
001 Alpha Pond ¹	8.5	2.0	21.6	2.8
003 Brown Pond ²	7.9	0.3	27.5	4.7
004 Kelly Pond	0.7	0.3	4.6	6.6
016 Laguna Joint Wetlands	1.1	0.5	2.7	6.6
06A Meadow Lane Pond D ³	9.7	3.5	11.7	1.5
06B Meadow Lane Pond D	16.1	0.5	52.1	4.2
012A Delta Pond ⁴	2.6	0.3	5.7	1.0
012B Delta Pond ⁵	24.1	4.8	69.0	2.0

Notes:

- All flows are expressed in million gallons (Mgal.)
- The permitted discharge season is from October 1 to May 14
- No discharge from Alpha Pond for 2003-2004 discharge season
- No discharge from Brown Pond for 2002-2003 and 2003-2004 discharge seasons.
- No discharge from 06A for 1999-2000, 2001-2002, and 2003-2004 discharge seasons.
- Discharge from 012A only for 1999-2000 discharge season.
- No discharge from 012B for 2003-2004 discharge season. Calculation excludes data from 2002-2003 when Delta Pond took in water from Laguna de Santa Rosa.

- Advanced treated wastewater is also discharged to the Geysers steamfields and the Water Reclamation System as authorized by Section IV.C and Attachment G of this Order.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

1. Effluent limitations contained in the existing Order for discharges from the Laguna Treatment Plant directly to the Laguna de Santa Rosa (Monitoring Location 015) and representative monitoring data from the term of the previous Order are as follows:

Table 3. Summary of Discharge Monitoring Data for 2001-2005

Parameter (units)	Effluent Limitation			Monitoring Data (From January 2001 – December 2005)		
	Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
BOD ₅ (mg/l)	10	15	20	4.1	6.0	9.0
BOD ₅ (lb/d)	1,776	2,277	3,552	668	2,294	3,884
BOD ₅ (% removal) ¹	85	---	---	98.7%	---	---
Suspended Solids (mg/l)	10	15	20	2.0	2.7	7.0
Suspended Solids (lb/d)	1,776	2,277	3,552	543	883	2,658
Suspended Solids (% Removal) ¹	85	---	---	98.8%	---	---
Total Coliform Bacteria (MPN/ 100 ml)	---	2.2 ²	23 ³	---	4 ²	130
Turbidity (NTU)	2	---	5	1.2	---	6.4
Hydrogen Ion (pH units)	---	---	6.0 / 9.0 ⁴	---	---	6.8 / 8.1 ⁴

1. Lowest reported value
2. 7-day median
3. Highest reported daily geometric mean of results from 2-3 effluent channels within UV disinfection system
4. Minimum / Maximum

2. Effluent limitations contained in the existing Order for discharges from Meadow Lane Pond D and Delta Pond (Monitoring Locations 006A, 006B, 012A, 012B) and representative monitoring data from the term of the previous Order are as follows:

Table 4. Summary of Discharge Monitoring Data for Copper for 2000-2005

Parameter (units)	Effluent Limitation	Monitoring Data (From January 2000 – To December 2005)	
		Highest Daily Discharge	Associated Upstream Hardness
	Maximum Daily (hardness based) MDEL = $\exp((0.9422 \times \ln(H)) - 1.464)$		
Copper (µg/L) ¹	26.5	54	153 mg/L as CaCO ₃
Copper (µg/L) ²	25.6	16	148 mg/L as CaCO ₃

1. Maximum daily discharge from all monitoring locations (Kelly Pond (004), November 2, 2000)
2. Maximum daily discharge from monitoring locations 006A, 006B, 012A, 012B (D-Pond 48" (012B), January 8, 2003)

D. Compliance Summary

1. On October 27, 2000 the Regional Water Board directed that a complaint for administrative civil liability be issued to the City of Santa Rosa for mandatory penalties in the matter of effluent violations of WDRs, Regional Water Board Order No. 98-84 and State Water Resources Control Board (State Water Board) Order No. 2000-02. The civil liability assessed was \$21,000, which the City paid (\$15,000 of which occurred after issuance of 2000-2).
2. On April 30, 2002 the Regional Water Board directed that a complaint for mandatory administrative civil liability be issued to the City of Santa Rosa for violations of WDRs, State Water Board Order No. 2000-2. The civil liability assessed was \$15,000, which the City paid.
3. On May 2, 2002 the Regional Water Board directed that a complaint for administrative civil liability be issued to the City of Santa Rosa for violations of WDRs, State Water Board Order No. 2000-2. The civil liability assessed was \$12,350, which the City paid.
4. On September 13, 2004 the Regional Water Board directed that a complaint for violations of effluent and other NPDES permit violations be issued to the City of Santa Rosa, Order No. 2000-02. The civil liability assessed was \$37,850, which was paid on October 1, 2004.

E. Planned Changes

1. **Incremental Recycled Water Program (IRWP).** The City of Santa Rosa approved the IRWP, which effectively caps the annual discharge from the WWTF at 4,500 million gallons (based on an average dry weather flow of 21.34 mgd). Wastewater flows attributed to future growth anticipated between 2010 and 2020 will be allocated to reuse divided among agricultural and urban reuse, as well as to providing additional water for the Geysers Recharge Project. The total estimated cost of the program is \$225 million.
2. **Leachate Pipeline.** A project is underway to install a pipeline to convey leachate generated at the Sonoma County landfill to the Santa Rosa treatment facility. The new conveyance system will connect the leachate ponds to the Rohnert Park trunk sewer line where leachate will be pumped approximately 24,000 feet to a connection point just north of the Laguna de Santa Rosa. The design capacity of the system will be approximately 42.5 million gallons per year.
3. **Pond Usage.** The Discharger has requested that the Alpha Pond (001), the Kelly Pond (004), and the Poncia Pond (007) be removed as designated discharge locations in the renewed NPDES permit.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in the proposed Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the United States Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the CWC). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4 of the CWC for discharges that are not subject to regulation under CWA section 402.

B. California Environmental Quality Act (CEQA)

This action to adopt an NPDES permit is exempt from the provisions of CEQA (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the CWC.

C. State and Federal Regulations, Policies, and Plans

1. Water Quality Control Plans. The Regional Water Board adopted a Water Quality Control Plan for the North Coast Region (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, State Water Board Resolution No. 88-63 requires that, with certain exceptions, the Regional Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. Beneficial uses applicable to Colgan Creek, Santa Rosa Creek, the Laguna de Santa Rosa, and freshwater wetlands within the watershed are as follows:

Discharge Point	Receiving Water Name	Beneficial Use(s)
002	Colgan Creek	<u>Existing:</u>
003	Unnamed Ditch, tributary to Laguna de Santa Rosa	Agricultural supply (AGR); industrial service supply (IND); Ground water recharge (GWR); navigation (NAV);
005	Unnamed Ditch, tributary to Laguna de Santa Rosa	hydropower generation (POW); contact (REC-1) and non-contact (REC-2) water recreation; commercial and Sport fishing (COMM); Warm freshwater habitat (WARM); cold freshwater habitat (COLD); wildlife habitat (WILD);
006A, 006B, 014, 015, 016	Laguna de Santa Rosa	preservation or rare, threatened or endangered species (RARE); freshwater replenishment (FRESH); migration of aquatic organisms (MIGR); spawning, reproduction and/or early development, Native American Culture (CUL), subsistence fishing (FISH), Flood peak attenuation/Flood water storage (FLD), Water quality enhancement (WQE). <u>Potential:</u> Municipal and domestic water supply (MUN); industrial process supply (PRO); shellfish harvesting (SHELL); aquaculture (AQUA).
008, 009, 012A, 012B	Santa Rosa Creek	<u>Existing:</u> Municipal and domestic water supply (MUN); agricultural supply (AGR); industrial service supply (IND); Ground water recharge (GWR); navigation (NAV); contact (REC-1) and non-contact (REC-2) water recreation; commercial and Sport fishing (COMM); Warm freshwater habitat (WARM); cold freshwater habitat (COLD); wildlife habitat (WILD); preservation or rare, threatened or endangered species (RARE); migration of aquatic organisms (MIGR); spawning, reproduction and/or early development, Native American Culture (CUL), subsistence fishing (FISH), Flood peak attenuation/Flood water storage (FLD), Water quality enhancement (WQE). <u>Potential:</u> Industrial process supply (PRO); hydropower generation (POW); shellfish harvesting (SHELL); aquaculture (AQUA).
	Freshwater Wetlands	<u>Existing:</u> Wetland Habitat (WET). <u>Potential:</u> Municipal and domestic water supply (MUN); agricultural supply (AGR); industrial service supply (IND); Ground water recharge (GWR); freshwater replenishment (FRESH); navigation (NAV); contact (REC-1) and non-contact (REC-2) water recreation; commercial and Sport fishing (COMM); Warm freshwater habitat (WARM); cold freshwater habitat (COLD); wildlife habitat (WILD); preservation or rare, threatened or endangered species (RARE); migration of aquatic organisms (MIGR); spawning, reproduction and/or early development (SPWN); shellfish harvesting (SHELL); estuarine habitat (EST); aquaculture (AQUA); Native American Culture (CUL); Flood peak attenuation/Flood water storage (FLD), Water quality enhancement (WQE).

2. **Thermal Plan.** The State Water Board adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters.
3. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995 and November 9, 1999, and the CTR on May 18, 2000, which was amended on February 13, 2001. These rules include water quality criteria for priority pollutants and are applicable to this discharge.
4. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). The SIP applies to discharges of toxic pollutants into the inland surface waters, enclosed bays, and estuaries of California subject to regulation under the State's Porter-Cologne Water Quality Control Act (Division 7 of the CWC) and the federal CWA. The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California through the NTR and to the priority pollutant objectives established by the regional water boards in their basin plans. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP includes procedures for determining the need for and calculating WQBELs, and requires dischargers to submit data sufficient to do so.
5. **Antidegradation Policy.** State Water Board Resolution No. 68-16 (Resolution 68-16) and 40 CFR section 131.12, require the Regional Water Board, in regulating discharge of waste, to maintain high quality waters of the State until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Regional Water Board's policies. Resolution 68-16 requires the discharge be regulated to meet best practicable treatment or control (BPTC) to assure that pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit to the people of the State be maintained.

This Order may allow some degradation of the quality of waters of the state by virtue of the fact that it permits the discharge of waste exerting a biochemical oxygen demand, containing suspended solids, biostimulatory substances and elevated temperature above ambient conditions into a waterway impaired for dissolved oxygen, sediment, nitrogen, phosphorus, and temperature. Nevertheless, this Order is consistent with Resolution 68-16 because (1) such degradation is consistent with the maximum benefit to the people of the state, (2) the discharge is the result of wastewater utility service that is necessary to accommodate housing and economic expansion, and (3) it results in a high level of treatment of sewage waste. This Order requires tertiary treatment or equivalent, which is a high level of treatment that is considered BPTC for most constituents in the wastewater and will result in attaining water quality standards applicable to the discharge.

The discharge from the facility has the potential to cause or contribute to exceedances of applicable water quality objectives for certain constituents as described in this Order. However, this Order requires the Discharger, in accordance with specified compliance schedules under Section VI.C.4, to meet requirements that will result in the use of BPTC for those constituents and ultimately result in compliance with water quality objectives. This Order requires compliance with technology-based standards for biochemical oxygen demand, total suspended solids and pH and more stringent water quality-based standards for nonconventional pollutants with the reasonable potential to cause or contribute to excursions of water quality objectives.

This Order authorizes the Discharger to discharge biostimulants (nitrogen and phosphorus) to surface water in concentrations and mass emission rates based on the current level of treatment plant performance. Section IV.A.2 of this Order establishes interim concentration-based effluent limitations for nitrate, Total Kjeldahl Nitrogen, and Total Phosphate and interim mass-based interim limitations for Total Nitrogen and Total Phosphate. Final effluent limitations for biostimulants will be established at levels determined by an approved TMDL for the Laguna de Santa Rosa or at zero (i.e., “no net loading”). During this permit term, it is expected that the Discharger will make the necessary changes to its treatment and disposal system to meet final effluent limitations for nitrate, Total Kjeldahl Nitrogen, and Total Phosphate. In the interim, the Discharger must comply with the conditions set forth in sections VI.C.4.c and VI.C.4.d of this Order.

6. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and 40 CFR §122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. Some effluent limitations in the Order are less stringent than those in the previous Order. As discussed in this Fact Sheet, this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.
7. **Monitoring and Reporting Requirements.** 40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. CWC Sections 13267 and 13383 authorize the regional water boards to require technical and monitoring reports. The Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements to implement federal and State requirements. This MRP is provided in Attachment E.

D. Impaired Water Bodies on CWA 303(d) List

1. Section 303(d) of the federal CWA requires states to identify waterbodies that do not meet water quality standards and are not supporting their beneficial uses. Each state must submit an updated list, called the 303(d) List of Impaired Waterbodies, to USEPA by April of each even numbered year. In addition to identifying the waterbodies that are not supporting beneficial uses, the List also identifies the pollutant or stressor causing impairment, and establishes a schedule for developing a control plan to address the impairment. The

USEPA requires the Regional Water Board to develop total maximum daily loads (TMDLs) for each 303(d) listed pollutant and water body combination.

2. The Laguna de Santa Rosa is currently listed for low dissolved oxygen, nitrogen, phosphorus, sediment, and temperature. The Middle Russian River (Santa Rosa Creek HSA) is listed for pathogens, sediment, and temperature. The Lower Russian River (Mark West Creek HSA) is listed for sediment and temperature. A designated reach in the mainstem of the Lower Russian River (Guerneville HSA) is listed for pathogens, sediment, and temperature.
3. On July 25, 2003, USEPA gave final approval to California's 2002 Section 303(d) List of Water Quality Limited Segments.

E. Other Plans, Policies and Regulations

1. The Discharger has storm water discharges associated with industrial activities, category "ix" as defined in 40 CFR Section 122.26(b)(14). The Discharger has prepared a Storm Water Pollution Prevention Plan (SWPP Plan) and has implemented the provisions of the SWPP Plan. The Discharger must describe storm water discharges, appropriate pollution prevention practices and best management practices in a completed Notice of Intent to be submitted to the State Water Board pursuant to the Statewide General Order Program.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source discharges to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES Orders. NPDES regulations establish two principal bases for effluent limitations. At 40 CFR 122.44 (a) Orders are required to include applicable technology-based limitations and standards; and at 40 CFR 122.44 (d) Orders are required to include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. When numeric water quality objectives have not been established, but a discharge has the reasonable potential to cause or contribute to an excursion above a narrative criterion, WQBELs may be established using one or more of three methods described at 40 CFR 122.44 (d) - 1) WQBELs may be established using a calculated water quality criterion derived from a proposed State criterion or an explicit State policy or regulation interpreting its narrative criterion; 2) WQBELs may be established on a case-by-case basis using USEPA criteria guidance published under CWA Section 304 (a); or 3) WQBELs may be established using an indicator parameter for the pollutant of concern.

A. Discharge Prohibitions

1. **Discharge Prohibition III. A. The discharge of any waste not disclosed by the Discharger or not within the reasonable contemplation of the Regional Water Board is prohibited.**

This prohibition is based on the Basin Plan, previous Order, and State Water Board Order WQO 2002-0012 regarding the petition of WDR Order No. 01-072 for the East Bay Municipal Utility District and Bay Area Clean Water Agencies. In State Water Board Order WQO 2002-0012, the State Water Board found that this prohibition is acceptable in permits, but should be interpreted to apply only to constituents that are either not disclosed by the discharger or are not reasonably anticipated to be present in the discharge, but have not been disclosed by the discharger. It specifically does not apply to constituents in the discharge that do not have “reasonable potential” to exceed water quality objectives.

The State Water Board has stated that the only pollutants not covered by this prohibition are those which were “disclosed to the permitting authority and they can be reasonably contemplated.” (In re the Petition of East Bay Municipal Utilities District et al., (State Water Board 2002) Order No. WQ 2002-0012, p. 24.) The case cited in that order by the State Water Board reasoned that the discharger is liable for discharges “not within the reasonable contemplation of the permitting authority . . . , whether spills or otherwise” (Piney Run Preservation Assn. v. County Commissioners of Carroll County, Maryland (4th Cir. 2001) 268 F.3d 255, 268.) Thus, State Water Board authority provides that, to be permissible, the constituent discharged (1) must have been disclosed by the discharger and (2) can be reasonably contemplated by the Regional Water Board.

The Regional Water Board has the authority to determine whether the discharge of a constituent is “reasonably contemplated.” The Piney Run case makes clear that the discharger is liable for discharges “not within the reasonable contemplation of the permitting authority . . . , whether spills or otherwise” (268 F.3d 255, 268.) In other words, whether or not the discharger reasonably contemplates the discharge of a constituent is not relevant. What matters is whether the discharger disclosed the constituent to the Regional Water Board or whether the presence of the pollutant in the discharge can otherwise be reasonably contemplated by the Regional Water Board at the time of permit adoption.

2. Discharge Prohibition III.B. Creation of a pollution, contamination, or nuisance, as defined by CWC Section 13050 is prohibited.

This prohibition is based on CWC Section 13050. It has been retained from the previous order, Water Quality Order No. 2000-03.

3. Discharge Prohibition III.C. The discharge of sludge is prohibited, except as authorized under Section VI.C.6.d. Solids Disposal and Handling Requirements.

This prohibition is based on restrictions on the disposal of sewage sludge found in federal regulations (40 CFR Part 503 (Biosolids) Part 527 and Part 258) and Title 27 CCR. It has been retained from Water Quality Order No. 2000-03.

4. Discharge Prohibition III.D. The discharge of untreated or partially treated waste (receiving a lower level of treatment than described in Finding II.B) from anywhere within the collection, treatment, or disposal facility is prohibited, except as provided

for in Prohibition III.E. and Attachment D, Standard Provision I.G [Bypass Provision].

This prohibition has been retained from Water Quality Order No. 2000-03 and is based on the Basin Plan to protect beneficial uses of the receiving water from unpermitted discharges, and the intent of CWC sections 13260 through 13264 relating to the discharge of waste to waters of the State without filing for and being issued a permit. This prohibition applies to spills not related to sanitary sewer overflows (SSOs) and other unauthorized discharges of wastewater within the collection, treatment, reclamation, and disposal facilities. The discharge of untreated or partially treated wastewater from the collection, treatment, or disposal facility represents an unauthorized bypass pursuant to 40 CFR 122.41(m) or an unauthorized discharge which poses a threat to human health and/or aquatic life, and therefore, is explicitly prohibited by this Order.

5. Discharge Prohibition III.E. Any SSO that results in a discharge of untreated or partially treated wastewater to (a) waters of the State, (b) groundwater, or (c) land that creates a pollution, contamination, or nuisance as defined in CWC section 13050(m) is prohibited.

This prohibition is based on State standards, including section 13050 of the CWC and the Basin Plan. This prohibition is consistent with the States' antidegradation policy as specified in State Water Board Resolution No. 68-16 (Statement of Policy with Respect to Maintaining high Quality of Waters in California) in that the prohibition imposes conditions to prevent impacts to water quality, does not allow the degradation of water quality, will not unreasonably affect beneficial uses of water, and will not result in water quality less than that prescribed in State Water Board or Regional Water Board plans and policies.

This prohibition is stricter than the prohibitions stated in State Water Board Order 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. Order 2006-0003-DWQ prohibits SSOs that result in the discharge of untreated or partially treated wastewater to waters of the United States and SSOs that create a nuisance. Prohibition III.E. of this Order further prohibits any SSO that results in the discharge untreated or partially treated wastewater to all waters of the State including surface waters that are not waters of the United States and groundwater due to the prevalence of high groundwater in this Region and this Region's reliance on groundwater as a drinking water source.

6. Discharge Prohibition III.F. The discharge of waste to land that is not owned by or under agreement to use by the Discharger is prohibited, except for use for fire suppression as provided in CCR Title 22 section 60307(a) and (b).

This prohibition is retained from Water Quality Order No. 2000-03. Land used for the application of wastewater must be owned by the Discharger or be under the control of the Discharger by contract so that the Discharger maintains a means for ultimate disposal of treated wastewater.

In accordance with CCR Title 22 Section 60307, recycled water may be used for structural and nonstructural fire fighting. However, in the event of the authorized use of recycled water for fire suppression, the Discharger, to the extent practicable, is expected to implement best management practices that ensure that the discharge is managed in a manner that is protective of water quality.

- 7. Discharge Prohibition III.G. The discharge of waste at any point, except Discharge Points 002, 003, 005, 06A, 06B, 008, 009, 012A, 012B, 014, 015, and 016, as described in the table on page 1 of this Order, or authorized by any State Water Board or other Regional Water Board permit is prohibited.**

This prohibition is a general prohibition that allows the Discharger to discharge waste only in accordance with waste discharge requirements. It is based on Sections 301 and 402 of the federal CWA and CWC Section 13263.

- 8. Discharge Prohibition III. H. The average daily dry weather flow of waste into the Subregional System wastewater treatment facility in excess of 21.34 mgd, as determined from the lowest consecutive 30-day mean daily flow, is prohibited.**

The flow limitation of 21.34 mgd (average daily dry weather flow) is retained from Water Quality Order No. 2000-03 and is intended to ensure that wastewater flows do not exceed the Facility's design capacity.

- 9. Discharge Prohibition III. I. The discharge of wastewater effluent from the WWTF to the Russian River or its tributaries is prohibited during the period May 15 through September 30 each year.**

This prohibition is required by the Basin Plan. The Basin Plan prohibits discharges to the Russian River and its tributaries during the period May 15 through September 30 (Chapter 4, North Coastal Basin Discharge Prohibition No. 4). The original intent of this prohibition was to prevent the contribution of wastewater to the baseline flow of the Russian River during the period of the year when the Russian River and its tributaries experience the heaviest water-contact recreation use.

- 10. Discharge Prohibition III.J. During the period of October 1 through May 14, discharges of recycled water shall not exceed five percent of the flow of the Russian River as measured at Hacienda Bridge (USGS gauge No 11-4670.00)**

The Basin Plan prohibits discharges to the Russian River and its tributaries when the waste discharge flow is greater than one percent of the receiving water's flow. The Basin Plan was amended in 1993 to allow the discharge of advanced treated wastewater from the Laguna Regional Treatment and Disposal Facilities to the Russian River at a rate of up to five percent of the flow in the Russian River. This Prohibition retains the language in the previous permit; Water Quality Order No. 2000-03.

B. Technology-Based Effluent Limitations

1. **Scope and Authority.** The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in Section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the USEPA Administrator. Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 40 CFR 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of biochemical oxygen demand (BOD₅), total suspended solids (TSS), and pH. In addition, 40 CFR 122.45 (f) requires the establishment of mass-based effluent limitations for all pollutants limited in Orders, except, 1) for pH, temperature, radiation, or other pollutants which cannot appropriately be expressed by mass, (2) when applicable standards and limitations are expressed in terms of other units of measure, and (3) when limitations expressed in terms of mass are infeasible because the mass of the pollutant cannot be related to a measure of operation and permit conditions ensure that dilution will not be used to comply with both limitations.
2. **Applicable Technology-Based Effluent Limitations.** The Basin Plan states that discharges “shall be of advanced treated wastewater in accordance with effluent limitations contained in NPDES permits for each affected discharger, and shall meet a median coliform level of 2.2 MPN/100 ml.” This requirement leaves discretion to the Regional Water Board to define AWT via effluent limitations in individual permits.
 - a. **Biochemical Oxygen Demand and Suspended Solids.** Thus, for the purpose of regulating municipal waste discharges from the WWTF to the Laguna de Santa Rosa and its tributaries, advanced wastewater treatment is defined as achieving a monthly average concentration for BOD and suspended solids of 10 mg/l, and a weekly average concentration of 15 mg/l, which are technically achievable based on the capability of a tertiary system. In addition, 40 CFR 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent.
 - b. **Total Coliform Organisms.** The disinfected effluent discharged from the WWTF to the Laguna de Santa Rosa shall not contain concentrations of total coliform bacteria exceeding the following limitations:
 - i. The median concentration shall not exceed a Most Probable Number (MPN) of 2.2 per 100 milliliters, using the bacteriological results of the last seven days for which analyses have been completed.
 - ii. The number of coliform bacterial does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30-day period.
 - iii. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.

Table 6. Summary of Technology-based Effluent Limitations for Treatment Plant Final Effluent

Parameter	Units	Effluent Limitations		
		Average Monthly	Average Weekly	Maximum Daily
BOD (20°C, 5-day)	mg/L	10	15	---
Dry Weather	lbs/day	1,780	2,670	---
Wet Weather ¹	lbs/day	3,945	8,006	---
Total Suspended Solids	mg/L	10	15	---
Dry Weather	lbs/day	1,780	2,670	---
Wet Weather	lbs/day	3,945	8,006	---
Total Coliform Organisms	MPN/ 100 mL	---	2.2	23
Hydrogen Ion	pH units	Not less than 6 nor greater than 9		

¹ Wet weather conditions are when the average weekly or average monthly influent flow exceeds 21.34 mgd.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

As specified in 40 CFR §122.44(d)(1)(i), permits are required to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard. The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses for the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

- a. **Beneficial Uses.** The beneficial uses of the Laguna de Santa Rosa and the Russian River include municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, groundwater recharge, navigation, hydropower generation, water contact recreation, non-contact water recreation, commercial and sport fishing, warm freshwater habitat, cold freshwater habitat, wildlife habitat, preservation of rare, threatened, or endangered species, migration of aquatic organisms, spawning, reproduction, and/or early development, estuarine habitat, aquaculture, water quality enhancement, flood peak attenuation/flood water storage, wetland habitat, and subsistence fishing. Beneficial uses of areal groundwaters include: municipal and domestic water supply, agricultural water supply, industrial service supply and industrial process supply.
- b. **Narrative Objectives.** In addition to the specific water quality objectives indicated above, the Basin Plan contains the following narrative objectives that apply to inland surface waters, enclosed bays, and estuaries:
 - i. Biostimulatory Substances: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
 - ii. Sediment: The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
 - iii. Dissolved Oxygen: Dissolved oxygen concentrations shall conform to those limits listed in Table 1 (of the Basin Plan). For waters not listed in Table 1 and where dissolved oxygen objectives are not prescribed the dissolved oxygen concentrations shall not be reduced below the following minimum levels at any time.

Waters designated WARM, MAR or SAL....5.0 mg/l

Waters designated COLD..... 6.0 mg/l
Waters designated SPAWN.....7.0 mg/l
Waters designated SPAWN during critical
spawning and egg incubation periods.....9.0 mg/l

- iv. Bacteria: The bacteriological quality of waters of the North Coast Region shall not be degraded beyond natural background levels. In no case shall coliform concentrations in waters of the North Coast Region exceed the following:

In waters designated for contact recreation (REC-1), the median fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed 50/100 ml, nor shall more than ten percent of total samples during any 30-day period exceed 400/100 ml (State Department of Health Services).

- v. Temperature: Temperature objectives for COLD interstate waters, WARM interstate waters, and Enclosed Bays and Estuaries are as specified in the "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays of California" including any revisions thereto. A copy of this plan is included verbatim in the Appendix Section of the Basin Plan.

In addition, the following temperature objectives apply to surface waters:

The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses.

- vi. Toxicity: All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods as specified by the Regional Water Board.

The survival of aquatic life in surface waters subjected to a waste discharge, or other controllable water quality factors, shall not be less than that for the same water body in areas unaffected by the waste discharge, or when necessary for other control water that is consistent with the requirements for "experimental water" as described in Standard Methods for the Examination of Water and Wastewater, 18th Edition (1992). As a minimum, compliance with this objective as stated in the previous sentence shall be evaluated with a 96-hour bioassay.

In addition, effluent limits based upon acute bioassays of effluents will be prescribed. Where appropriate, additional numerical receiving water objectives for specific toxicants will be established as sufficient data become available, and source control of toxic substances will be encouraged.

- c. **State Implementation Policy (SIP), CTR and NTR.** The CTR identifies 126 priority pollutants and lists aquatic life freshwater, aquatic life saltwater and human health criteria for most of the 126 priority pollutants and indicates that such criteria will be developed for the remaining criteria at a future date. Aquatic life freshwater and saltwater criteria are further identified as criterion maximum concentrations (CMC) and criterion continuous concentrations (CCC). The CTR defines the CMC as the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time without deleterious effects and the CCC as the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (4 days) without deleterious effects. The CMC is used to calculate an acute or one-hour average numeric effluent limitation and the CCC is used to calculate a chronic or 4-day average numeric effluent limitation.

Human health criteria are further identified as “water and organisms” and “organisms only.” The criteria from the “water and organisms” column of CTR were used for the preliminary reasonable potential analysis because the Basin Plan identifies that the receiving water, the Russian River is a source of municipal and domestic drinking water supply. The human health criteria are used to calculate human health effluent limitations.

- d. **Dilution Credits/Mixing Zones.** The CWA directs states to adopt water quality standards to protect the quality of its waters. USEPA’s current water quality standards regulation authorizes states to adopt general policies, such as mixing zones, to implement state water quality standards (40 CFR section 122.44 and section 122.45). The USEPA allows states to have broad flexibility in designing its mixing zone policies. Primary policy and guidance on determining mixing zone and dilution credits is provided by the SIP, the USEPA Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001) (TSD), and the Basin Plan. For NPDES permits in California, the SIP supersedes the USEPA guidance for priority pollutants, to the extent that it addresses a particular procedure. The SIP does not apply to non-priority pollutants, in which case the more stringent of the Basin Plan or USEPA guidance applies. No dilution has been granted in this Order, thus end-of-pipe effluent limitations for all constituents are required.
- e. **Translators.** The water quality objectives for most metals are defined as dissolved metal. Whereas effluent limitations for metals, and most water quality data, are expressed as total metal. Metal translators are used to convert dissolved metal to total metal or vice versa. There have been no approved studies to evaluate discharge-specific metal translators for the discharge to the Russian River or its tributaries.
- f. **Discharger-Specific WER.** The SIP allows for the development of site-specific objectives (SSOs) to modify applicable priority pollutant criteria or objectives. One method for deriving SSOs is the USEPA’s Water Effects Ratio (WER) procedure. As amended on February 24, 2005, the SIP allows for the development of a discharger-specific WER, whereby the WER applies only to the applicable limits in the

discharger's permit. A discharger-specific WER is distinguished from a WER that are developed on a waterbody or watershed basis as part of a water quality standards action resulting in adoption of an SSO. Implementation procedures for the development and use of SSOs are contained in Section 5.2 of the SIP. Additional guidance for development of SSOs are available in the *Draft Compilation of Existing Guidance for the Development of Site-Specific Water Quality Objectives in the State of California*, prepared for the USEPA by the Great Lakes Environmental Center.

On January 6, 2006, the Discharger submitted a *draft Work Plan for a Copper Water Effect Ratio Study for the Laguna Subregional Water Reclamation Facility*. The draft work plan is currently under review. Should the Regional Water Board approve the use of a discharger-specific WER for copper, the permit may be reopened and modified, as appropriate, in consideration of this new information.

3. Determining the Need for WQBELs

a. Non-Priority Pollutants.

- i. **Nitrate.** The Basin Plan requires that waters designated as domestic or municipal supply (MUN) not contain concentrations of chemical constituents in excess of limits specified in Title 22, Division 4, Chapter 15, Articles 4 and 5.5 of the California Code of Regulations (CCR). Table 3-2 of the Basin Plan contains concentration limits for inorganic, organic and fluoride. The maximum allowable concentration for nitrate is 45 mg/l as NO₃ (10 mg/l as N).
- ii. **Biostimulatory Substances.** On June 5 and July 25, 2003, the USEPA modified and approved the list of impaired water bodies, prepared by the State Water Board pursuant to Section 303 (d) of the CWA – water bodies which are not expected to meet applicable water quality standards after implementation of technology-based effluent limitations for point sources. The 303 (d) list includes the Laguna de Santa Rosa within the Middle Russian River Hydrologic Area as impaired by low dissolved oxygen, nitrogen, phosphorous, sedimentation/siltation, and temperature. The CWA requires the Regional Water Board to establish, in accordance with a priority ranking for 303 (d) listed waters, TMDLs for each impairing pollutant – the maximum amount (including a margin of safety) of each pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's point and nonpoint sources. On October 27, 1994, the Regional Water Board approved a “TMDL” approach for the Laguna de Santa Rosa to satisfy Section 303(d) requirements, but this approach was subsequently found not to contain the minimum elements of a TMDL. For example, follow-up compliance monitoring, a critical element for TMDLs, was not continued.

The effects of the impairing pollutants on the Laguna de Santa Rosa are significant and are increasing with increased watershed urbanization, removal of riparian vegetation, loss of flood retention capacity, and increased discharges of wastewater and urban storm water runoff. As the assimilative capacity of the water body for

biostimulatory substances, primarily nitrogen and phosphorous, has been exceeded, phosphorous is now sequestered in the sediment and is cycled into the biota with any addition of available nitrogen. Excessive nitrogen and phosphorous levels are contributing to secondary water quality impairments, including nuisance plant growth, which adversely impacts REC1 and REC2 beneficial uses and consumes dissolved oxygen. Nuisance plant growth also creates conditions that impede flow, thereby increasing the rate of sedimentation and the potential for local and regional flooding, and provides habitat conducive to mosquito breeding. The potential health consequences of the mosquito-borne West Nile Virus are so severe that, over the next five years, local agencies will spend approximately \$1.9 million to eradicate the invasive weed, *Ludwigia*, from the Laguna. In 2005, alone, local agencies removed 5,300 tons of *Ludwigia* from two limited areas of the Laguna.

Although sedimentation within the Laguna is likely contributing to the increased aquatic growth within the Laguna; however, levels of nutrients (nitrogen and phosphorous) within the receiving water are high relative to nutrient levels that are expected in other waterbodies in USEPA ecoregion 6², and are a significant contributor to the deteriorating conditions within the Laguna de Santa Rosa. Wastewater from the Laguna Subregional Wastewater Treatment Facility, along with other anthropomorphic sources of nitrogen and phosphorus including septic systems, runoff from agricultural operations, and urban runoff have been tentatively identified as the primary sources of nutrients in the Laguna.

Discharge monitoring results from Brown Pond, Kelly Pond, Meadow Lane A Pond, Meadow Lane D Ponds, Delta Pond, and the Demonstration Wetlands were reviewed for discharges occurring from January 2003 through March 2006. These results show an average discharge concentration of Total Kjeldahl Nitrogen (TKN) (ammonia-nitrogen plus organic nitrogen) of 1.36 mg/l, and an average concentration of Total Phosphate (TP) of 1.78 mg/l. Table 7 compares effluent data to existing concentrations of nutrients in the Laguna de Santa Rosa and to nutrient levels that are expected in water bodies in USEPA Region 9 ecoregion 6. This comparison provides evidence that the Laguna de Santa Rosa has elevated concentrations of nitrogen and phosphorus in the water column relative to both impaired and minimally impaired water bodies in the region and the discharge from the WWTF contains nutrients that contribute to the concentration of nutrients in the Laguna.

² Ecoregions are large-scale landscape units that include relatively homogeneous ecosystems and are distinguishable from other ecoregions. There are 16 Level III ecoregions in USEPA Region 9. The primary distinguishing characteristic of Ecoregion 6 is its Mediterranean climate of hot dry summers and cool, moist winters, and associated vegetative cover comprising mainly chaparral and oak woodlands; grasslands occur in lower elevations and patches of pine are found at higher elevations.

Table 7. Effluent and Water Quality Data Compared to Other Water Bodies in Ecoregion 6

Ammonia	Number of Samples	Average Concentration (mg/L)
Minimally Impacted	261	0.05
Unimpaired	1,229	0.41
Impaired (nutrient)	907	0.34
Impaired (other)	1,279	0.47
Laguna de Santa Rosa	279	1.16
Subregional Water Reclamation System Effluent	131	0.46
Total Kjeldahl Nitrogen (ammonia + organic N)		
Minimally Impacted	156	0.31
Unimpaired	1,425	1.01
Impaired (nutrient)	868	1.06
Impaired (other)	1,486	0.97
Laguna de Santa Rosa	67	1.09
Subregional Water Reclamation System Effluent	131	1.36
Total Phosphate		
Minimally Impacted	260	0.05
Unimpaired	1,671	0.49
Impaired (nutrient)	1,056	0.60
Impaired (other)	1,793	0.45
Laguna de Santa Rosa	68	1.38
Subregional Water Reclamation System Effluent	131	1.78

Notes:

Water quality data for the Laguna de Santa Rosa is from a compilation of data from the Discharger's SMRs, surface water ambient monitoring (SWAMP) data, and other data provided to the Regional Water Board in electronic format.

Effluent data is from monitoring results from Brown Pond, Kelly Pond, Meadow Lane A Pond, Meadow Lane D Ponds, Delta Pond, and the Demonstration Wetlands was reviewed for discharges occurring from January 2003 through March 2006.

Nutrient data for Ecoregion 6 was made available to the Regional Water Board by Tetra Tech, Inc.

Based on its analysis of effluent and water quality data as well as information on the physical condition of the receiving waterbody, the Regional Water Board has determined that the biostimulatory components of discharges from the Laguna Subregional Wastewater Reclamation Facility have a reasonable potential to contribute to and promote excessive aquatic growth occurring within the Laguna de Santa Rosa and are, therefore, contributing to exceedances of the Basin Plan's narrative water quality objective for biostimulatory substances and the impairment of the Laguna de Santa Rosa. In order to control the level of nutrients in the discharge, comply with the narrative water quality objective, and prevent additional

degradation of beneficial uses this permit establishes interim performance-based effluent limitations for TKN and Total Phosphate.

During this permit term, the Regional Water Board plans to develop and adopt TMDLs for nitrogen and phosphorus which will specify wasteload allocations (WLAs) for point sources and load allocations (LA) for non-point sources, as appropriate. Following the adoption of these TMDLs by the Regional Water Board, this Order will be issued with final WQBELs based on applicable WLAs. Alternatively, in the absence of a TMDL at the end of the compliance schedule authorized by this Order, the final effluent limitation for nitrogen and phosphorus will be zero, or "no net loading."

The "no net loading" approach is based on effective water quality standards in the Basin Plan, including State and federal antidegradation policies (see SWRCB Resolution No. 68-16 and 40 CFR 131.12), and NPDES permitting regulations, including 40 CFR 122.44(d)(1) and 40 CFR 122.4(a). Any loading of a bioaccumulative/persistent pollutant to a receiving water with a beneficial use already impaired by that pollutant has the reasonable potential to cause or contribute to an exceedance of narrative water quality objective(s) in the Basin Plan (see 40 CFR 122.44(d)(1)(i)), and is in violation of State and federal antidegradation policies which require that existing instream beneficial uses and the level of water quality necessary to protect these uses be maintained and protected when a permit is issued by the Regional Water Board. The requirement that existing beneficial uses be protected is not satisfied if water quality objectives are exceeded. Where baseline water quality is less than the quality defined by the water quality objective, the antidegradation standard requires that water quality must be improved to a level that achieves the water quality objective (see page 4, Antidegradation policy implementation for NPDES permitting, SWRCB 90-004, Administrative Procedures Update, May 1990). Finally, 40 CFR 122.4(a) prohibits issuance of an NPDES permit when permit conditions do not provide for compliance with the CWA, or regulations promulgated under the CWA, including water quality standards and NPDES regulations. In the absence of a TMDL which provides that an alternative load can be assimilated by the receiving water, the only effluent limit for the pollutant which will ensure that the discharge does not cause or contribute to an exceedance of water quality standards and does comply with water quality standards and NPDES regulations is a net loading of zero.

A "no net loading" effluent limit may be met by: 1) reducing the effluent concentration below detectable levels through source control and/or treatment; 2) reducing loads through recycling/reclamation or through relocation of the discharge location; and/or 3) reducing loads elsewhere in the watershed by an amount at least equal to the amount discharge (and of equivalent bioavailability) through an approved offset program.

- b. **Priority Pollutants.** The SIP Section 1.3 requires the Regional Water Board to use all available, valid, relevant, and representative receiving water and effluent data and

information to conduct a reasonable potential analysis. The Discharger has collected effluent data for priority pollutants for the raw effluent and discharge locations 06A, 06B, 012A, and 012B. The data set on which the reasonable potential analysis is based is included in self-monitoring reports January 1998 through July 2004. Additional effluent and ambient background data for all 126 priority pollutants were submitted by the Discharger in response to an April 27, 2001 technical information request (13267) letter titled “California Water Code Section 13267(b) Order; Requirement for submittal of Technical/Monitoring Report for Monitoring Priority Pollutants Regulated in the California Toxics Rule (CTR)”. The Discharger sampled effluent on May 14, 2002 and January 23, 2003. Receiving water samples were collected from Santa Rosa Creek and the Laguna de Santa Rosa on May 13, 2002 and January 22, 2003. All samples were analyzed for all 126 priority pollutants.

Some freshwater water quality criteria for metals are hardness dependent; i.e., as hardness decreases, the toxicity of certain metals increases and the applicable water quality criteria become correspondingly more stringent. For this reasonable potential analysis, Regional Water Board staff has used a receiving water hardness concentration of 53.5 mg/L CaCO₃, based on receiving water data submitted by the Discharger. The use of the lowest receiving water hardness concentration provides the most protective approach for determining which parameters to require effluent limitations for the protection of aquatic life in the receiving stream. The range of ambient hardness the permitted receiving waters varied widely, as illustrated in the following table:

Table 8. Receiving Water Hardness for Discharge Points from 1998 to 2003

Discharge Point (ID)	Receiving Water	Hardness (mg/l as CaCO ₃)			
		Upstream		Downstream	
		min	max	min	max
Alpha Pond (001)	Roseland Creek	133	316	147	214
Brown Pond (003)	Laguna de Santa Rosa	80	249	75	210
Kelly Pond (004)	Duer Creek	53.5	547	55	218
D-Incline Pump (06A)	Laguna de Santa Rosa	76	118	74	133
D Pond 36 (06B)	Laguna de Santa Rosa	66	289	80	239
Delta Pond 48 (12B)	Santa Rosa Creek	58	180	61	154
Laguna Joint Wetlands (016)	Laguna de Santa Rosa	70	269	74	268

Source : Self Monitoring Reports and electronic submittals provided by the Discharger

To conduct the reasonable potential analysis, Regional Water Board staff identified the maximum observed effluent (MEC) and background (B) concentrations for each priority pollutant from effluent and receiving water data provided by the Discharger and compared this data to the most stringent applicable water quality criterion (C) for each pollutant from the NTR, CTR, and the Basin Plan. Section 1.3 of the SIP establishes three triggers for a finding of reasonable potential.

Trigger 1. If the MEC is greater than C, there is reasonable potential, and an effluent limitation is required.

Trigger 2. If B is greater than C, and the pollutant is detected in effluent ($MEC > ND$), there is reasonable potential, and an effluent limitation is required.

Trigger 3. After review of other available and relevant information, a permit writer may decide that a WQBEL is required. Such additional information may include, but is not limited to: the facility type, the discharge type, solids loading analyses, lack of dilution, history of compliance problems, potential toxic impact of the discharge, fish tissue residue data, water quality and beneficial uses of the receiving water, CWA 303 (d) listing for the pollutant, and the presence of endangered or threatened species or their critical habitat.

- c. **Reasonable Potential Determination.** Based on information submitted as part of the permit application, in studies, and as directed by monitoring and reporting programs, the Regional Water Board finds that the discharges from Monitoring Locations M-001 to M-103 have a reasonable potential to cause or contribute to an in-stream excursion above applicable water quality standards for copper, lead, nickel, cyanide, nitrate, total nitrogen, total phosphate. The RPA concludes that there is no reasonable potential for the remainder of the 126 priority pollutants or pollutants with other water quality objectives.

The following table summarizes the reasonable potential analysis for each priority pollutant that was reported in detectable concentrations in the raw effluent, storage pond effluent or the receiving water between January 1998 and July 2004. No other pollutants with applicable, numeric water quality criteria from the NTR, CTR, and the Basin Plan were measured above detectable concentrations during the monitoring events conducted by the Discharger. Appendix F-2 to this Order summarizes the reasonable potential analysis for all of the Discharger's effluent and receiving water monitoring data for priority pollutants.

Table 9. Summary of Reasonable Potential Analysis for Detected Priority Pollutants

CTR No.	Priority Pollutant	Lowest Applicable Water Quality Criteria(C)	Maximum Effluent Conc (MEC)	Maximum Detected Receiving Water Conc.(B)	RPA Result-Need Limit?	Reason	Recommendation
1.	Antimony	14	2	0.4, DNQ	No	$MEC < C$ and $B > C$	No WQBEL. Routine monitoring
2.	Arsenic	150	4	3.4	No	$MEC < C$ and $B > C$	No WQBEL. Routine monitoring
4.	Cadmium	1.5	0.3	0.04, ND	No	$MEC < C$ and $B > C$	No WQBEL. Routine monitoring
5a.	Chromium (Total)	124	21	3.3	No	$MEC < C$ and $B > C$	No WQBEL. Routine monitoring

CTR No.	Priority Pollutant	Lowest Applicable Water Quality Criteria(C)	Maximum Effluent Conc (MEC)	Maximum Detected Receiving Water Conc.(B)	RPA Result-Need Limit?	Reason	Recommendation
6.	Copper	5.5	18	25.6	Yes	MEC>C and B>C	WQBEL needed. Weekly monitoring
7.	Lead	1.4	5.8	1.8, DNQ	Yes	MEC>C and B>C	WQBEL needed. Weekly monitoring
8.	Mercury	0.050	0.3	0.0012, ND	No	BPJ	No WQBEL. Weekly monitoring
9.	Nickel	30.7	32	9.1	Yes	MEC>C and B<C	WQBEL needed. Weekly monitoring
11.	Silver	1.4	0.5	3.5, DNQ	No	MEC<C and B<C	No WQBEL. Routine monitoring
13.	Zinc	70.5	44	24	No	MEC<C and B<C	No WQBEL. Routine monitoring
14.	Cyanide	5.2	51	2.8, DNQ	Yes	MEC>C	WQBEL needed. Weekly monitoring.
26.	Chloroform	No Criteria	10.3	0.24, DNQ	No	No Criteria, BPJ	No WQBEL. Routine monitoring
27.	Dichlorobromomethane	0.56	1.8	0.1, ND	No	BPJ	No WQBEL. Routine monitoring
37.	1,1,2,2-Tetrachloroethane	0.17	1.2	0.057, ND	No	BPJ	No WQBEL Weekly monitoring
45.	2-Chlorophenol	120	5, ND	0.4, ND	No	BPJ	No WQBEL. Monthly monitoring
51.	4-Nitrophenol	No Criteria	5, ND	0.2, ND	No	No Criteria, BPJ	No WQBEL. Monthly monitoring
52.	3-methyl-4-chlorophenol	No Criteria	5, ND	5, ND	No	No Criteria, BPJ	No WQBEL. Monthly monitoring
53.	Pentachlorophenol	0.28	5, ND	0.4, ND	No	BPJ	No WQBEL. Monthly monitoring
54.	Phenol	21,000	5, ND	0.2, ND	No	MEC<C and B<C	No WQBEL. Monthly monitoring
56.	Acenaphthene	1200	5, ND	0.17, ND	No	MEC<C and B<C	No WQBEL. Monthly monitoring
68.	Bis(2-Ethylhexyl) Phthalate	1.8	570	0.3, ND	No	BPJ	No WQBEL. Weekly monitoring
77.	1,4 Dichlorobenzene	400	1.3	0.081, ND	No	MEC<C and B<C	No WQBEL. Routine monitoring
81.	Di-n-Butyl Phthalate	2,700	5.7	0.4, ND	No	MEC<C and B<C	No WQBEL. Routine monitoring
82.	2,4-Dinitrotoluene	0.11	5, ND	0.3, ND	No	BPJ	No WQBEL. Monthly monitoring
94.	Naphthalene	No Criteria	7.5	0.05, ND	No	No Criteria, BPJ	No WQBEL. Routine monitoring

CTR No.	Priority Pollutant	Lowest Applicable Water Quality Criteria(C)	Maximum Effluent Conc (MEC)	Maximum Detected Receiving Water Conc.(B)	RPA Result-Need Limit?	Reason	Recommendation
97.	N-Nitrosodi-n-Propylamine	0.005	5, ND	0.3, ND	No	BPJ	No WQBEL. Monthly monitoring
100.	Pyrene	960	0.03, ND	0.03, ND	No	MEC<C and B<C	No WQBEL. Routine monitoring
101.	1,2,4-Trichlorobenzene	No Criteria	5, ND	0.3, ND	No	No Criteria, BPJ	No WQBEL. Routine monitoring
104.	β-BHC	0.014	0.07	0.001, ND	No	BPJ	No WQBEL. Weekly monitoring
105.	γ-BHC (Lindane)	0.019	0.04	0.001, ND	No	BPJ	No WQBEL. Weekly monitoring
113.	Endosulfan (beta)	0.056	0.08	0.001, ND	No	BPJ	No WQBEL. Monthly monitoring

Notes:

1. ND = not detected
2. DNQ = detected, but not quantified
3. BPJ = Best Professional Judgment
4. The Discharger reported the following pollutant concentrations in a raw effluent sample from the Laguna Subregional Water Reclamation Facility on October 4, 1999: n-nitrosodi-n-propylamine (88.4 µg/l), pentachlorophenol (264 µg/l), 2-chlorophenol (158 µg/l), Acenaphthene (142 µg/l), 2,4-dinitrotoluene (155 µg/l), pyrene (157 µg/l), 1,2,4-trichlorobenzene (130 µg/l), 4-chloro-3-methylphenol (197 µg/l), 4-nitrophenol (278 µg/l), and phenol (210 µg/l). These results are believed to be erroneous and are not included in the table.
5. The Discharger reported 1,1,2,2-tetrachloroethane at a concentration of 1.2 µg/l in a pond effluent sample from the Laguna Subregional Water Reclamation Facility on February 16, 2000. This result is believed to be erroneous.

d. **Reasonable Potential Analysis.** The following section summarizes additional details regarding the reasonable potential analysis for pollutants for which reasonable potential has been determined and pollutants for which reasonable potential was rejected based on the best professional judgment of the permit writer:

- i. **Copper.** The CTR freshwater aquatic life acute and chronic criteria for copper, using the lowest receiving water hardness concentration of 53.5 mg/l, are 7.8 and 5.5 µg/l, respectively. The CTR human health criterion for copper is 1,300 µg/l.

The concentration of total recoverable copper in the treated effluent ranged from < 1.0 µg/l to 14 µg/l, in 31 samples. Twenty-one of the effluent concentrations exceeded the lowest CTR criterion of 5.5 µg/l. Monitoring results from pond discharge locations 06A, 06B, 012A, and 012B contained concentrations of total recoverable copper ranging from < 5 to 18 µg/l in 27 samples. Twenty-three of these results exceeded the lowest CTR Criterion. Therefore, there is reasonable potential for copper and effluent limitations are needed.

- ii. **Cyanide.** The CTR freshwater aquatic life acute and chronic criteria for cyanide are 22 µg/l and 5.2 µg/l, respectively. The CTR human health criterion for cyanide is 700 µg/l.

The concentration of total recoverable cyanide in the treated effluent ranged from 1.8 µg/l to 51 µg/l, in 31 samples (with 14 non-detects). Five of the effluent concentrations exceeded the lowest CTR criterion of 5.2 µg/l. Monitoring results from discharge locations 06A, 06B, 012A, and 012B contained concentrations of total recoverable cyanide ranging from < 3 to 12 µg/l in 27 samples. Two of these results exceeded the lowest CTR Criterion. Therefore, there is reasonable potential for cyanide and effluent limitations are needed.

- iii. **Lead.** The CTR freshwater aquatic life acute and chronic criteria for lead, using the lowest hardness concentration of 53.5 mg/l, are 36.8 and 1.4 µg/l, respectively. There is no human health criterion for lead.

The concentration of total recoverable lead in the treated effluent ranged from 0.14 to 5.8 µg/l, in 31 samples. Two of the effluent concentrations exceeded the lowest CTR criterion and analysis of monitoring samples prior to May 2002 used a detection limit greater than the lowest CTR criterion. Monitoring results from discharge locations 06A, 06B, 012A, and 012B contained concentrations of total recoverable lead ranging from < 2 to 5.8 µg/l in 27 samples. One of these sample results exceeded the lowest CTR Criterion. Therefore, there is reasonable potential for lead and effluent limitations are needed.

Seven out of eight receiving water samples submitted by the Discharger contained concentrations of total recoverable lead at concentrations ranging from 0.14 to 1.8 µg/l. The single result of 1.8 µg/l, determined from a sample collected on May 15, 2002, exceeds the lowest CTR criterion and contributes to staff's determination of reasonable potential.

- iv. **Nickel.** The CTR freshwater aquatic life acute and chronic criteria for nickel, using the lowest hardness concentration of 53.5 mg/l, are 276 µg/l and 30.7 µg/l, respectively. The CTR human health criterion for nickel is 610 µg/l.

Monitoring results submitted by the Discharger indicate that treatment facility effluent contained concentrations nickel ranging from < 2 µg/l to 7.3 µg/l in 31 samples. Monitoring results from discharge locations 06A, 06B, 012A, and 012B contained concentrations of total recoverable nickel ranging from < 5 to 32 µg/l in 27 samples. The two highest results of 32 µg/l and 30 µg/l were obtained from discharge location 012B on December 12, 2002 and January 8, 2003, respectively. In five subsequent monitoring samples collected from storage pond discharges from April 9, 2003 to April 12, 2005, the maximum effluent concentration was 7.2 µg/l. Since the MEC of 32 µg/l exceeds the lowest CTR criteria and the Discharger has provided no information that demonstrates that the reported results were erroneous

or invalid, there is reasonable potential that the discharge will exceed the CTR criterion for nickel and effluent limitations are required.

- v. **Mercury.** The CTR human health criterion for mercury is 0.050 µg/l. Currently, there are no freshwater aquatic life criteria for mercury.

Effluent monitoring data for May 14, 2002 and January 23, 2003 submitted by the Discharger contained mercury concentrations ranging from 0.0021 µg/l to 0.00394 µg/l in 4 samples. Mercury concentrations in raw effluent were not detected in 27 effluent samples (with detection limits ranging from 0.05 to 0.1 µg/l) prior to the 2002-2003 monitoring events. Monitoring results for mercury from monitoring locations 06A, 06B, 012A, and 012B were reported as non-detect in 27 samples from January 1998 to January 2004.

The MEC of 0.00394 for total recoverable mercury in raw effluent and storage pond discharges is less than the water quality criterion of 0.050 µg/l. However, conflicting monitoring results from a raw effluent sample were collected on 4/5/99, where a result for total recoverable mercury was reported as less than 0.2 µg/l and dissolved mercury was reported at a concentration of 0.3 µg/l for the same sample. This incongruous result suggests that

Although the dissolved mercury concentration exceeds the CTR Criterion for mercury, Regional Water Board staff has determined that, at this time, there is insufficient effluent monitoring data at or near the water quality criterion to justify a determination of reasonable potential for mercury. Instead, this Order directs the Discharger to conduct weekly monitoring of the raw effluent and the storage pond effluent, when discharging to surface water, to gather sufficient information to conduct a reasonable potential analysis. Should monitoring data indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of the human health criterion for mercury; the permit will be reopened to establish WQBELs for mercury and a pollution prevention plan to reduce the mass emission of mercury to surface waters.

- vi. **Beta-BCH and Gamma-BCH.** Beta and gamma- benzene hexachloride (BHC) are isomers of the synthetic chemical now referred to as hexachlorocyclohexane (HCH). The most commonly encountered isomer is gamma-HCH, or lindane, is an organo-chlorinated pesticide listed by the USEPA as a Persistent, Bioaccumulative and Toxic Chemical and is toxic to humans and wildlife. Lindane is also a priority pollutant, a hazardous material, and a Bioaccumulative Chemical of Concern. The CTR criterion for gamma-BCH to protect human health for drinking water sources (consumption of water and aquatic organisms) is 0.019 µg/l. The CTR criterion for beta-BCH is 0.014 µg/l.

Lindane is an ingredient in prescription shampoos to treat head lice. The use of lindane for this purpose was prohibited under state law beginning on January 1, 2002 so it was anticipated that its presence of this priority pollutant in wastewater

would decline after 2002. Effluent monitoring results since January 1998, which indicate only one detected concentration (0.02 µg/l) of lindane on 1/5/98 and one detected concentration of beta-BCH on February 16, 2000, and none thereafter, appear to support this projection. Receiving water samples from the Laguna de Santa Rosa and Santa Rosa Creek were collected on November 11, 2002 and February 20, 2003 and analyzed for gamma-BCH. The results of eight analyses were non-detect at a detection limits ranging from 0.001 to 0.01 µg/l.

This Order directs the Discharger to conduct weekly monitoring of the raw effluent and the storage pond effluent for beta and gamma-BCH, when discharging to surface water, to confirm the absence of these pollutants in the treated discharge. Should monitoring data indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of the human health criterion for beta and/or gamma-BCH, the permit will be reopened to establish WQBELs for the pollutant(s) and a pollution prevention plan to reduce the mass emission of the pollutant(s) to surface waters.

- vii. **Dichlorobromomethane (DCBM).** DCBM is a component of a group of chemicals, commonly known as trihalomethanes (THMs), which are formed during the disinfection process for drinking water and wastewater treatment through the reaction of chlorine and organic and inorganic material. Other THMs include chloroform, bromoform, and chlorodibromomethane. THMs are considered human carcinogens. The CTR criterion for DCBM to protect human health for drinking water sources (consumption of water and aquatic organisms) is 0.56 µg/l.

Effluent monitoring data for January 5, 1998, April 6, 1998, and July 6, 1998 showed DCBM in raw effluent at concentrations of 1 µg/l, 1.1 µg/l and 1.8 µg/l, respectively. However, the Discharger replaced chlorine as its primary disinfectant with ultraviolet disinfection in 1998 and has not reported detectable levels (with a detection limit of 0.5 µg/l) of DCBM or other THMs in raw effluent. Monitoring results from raw effluent samples and storage pond discharges since July 1998 were reported as non-detect with a minimum detection level of 0.5 µg/l.

- viii. **Chloroform.** Chloroform is a THM formed during the disinfection process for drinking water and wastewater treatment through the reaction of chlorine and organic and inorganic material. The federal primary maximum contaminant level (MCL) for total THMs is 80 µg/l.

Chloroform was detected in 8 of 47 treated effluent samples in the discharge from Meadow Lane Pond, Delta Ponds, and monitoring location 015 from 1999 to 2004. In the 8 samples where chloroform was detected above the method detection limit, concentrations ranged from 0.4 µg/l to 1.8 µg/l. All other samples showed no detectable concentrations at method detection limits ranging from 0.5 µg/l to 5 µg/l. Because the MEC is less than the MCL for chloroform and the Discharger has not use a significant quantity of chlorine in its treatment process since 1998, the discharge does not have reasonable potential to exceed the MCL for chloroform.

- ix. **Bis(2-Ethylhexyl) Phthalate.** Bis(2-ethylhexyl) phthalate belongs to a class of pollutants known as ortho-phthalate esters. Phthalate esters are widely used as plasticizers, primarily in the production of polyvinyl chloride (PVC) resins. Plasticizers are added to synthetic plastic resins to impart flexibility to the ordinarily brittle PVC, improve workability during fabrication and extend or modify properties not present in the original resins. PVC resins are used in a wide diversity of products including cable insulation, flooring, furniture upholstery, wall coverings, car upholstery and seat covers, footwear and food and medical packaging material. Phthalates also are used in cosmetics, industrial oils and insect repellants. The most widely used phthalate plasticizer is bis(2-ethylhexyl) phthalate, also known as di (2-ethylhexyl) phthalate or DEHP. DEHP released to water systems will biodegrade fairly rapidly (half-life 2-3 weeks). It will also strongly adsorb to sediments and bioconcentrate in aquatic organisms. The CTR criterion for DEHP to protect human health for drinking water sources (consumption of water and aquatic organisms) is 1.8 µg/l.

DEHP was detected at concentrations exceeding the CTR Criterion in three monitoring samples collected from wastewater storage pond discharges (monitoring locations 06B and 012B). Sewage sludge from the Santa Rosa Subregional WWTF is also known to contain relatively high concentrations of DEHP, which accumulates on sludge solids because of its hydrophobicity. As a result, it is suspected that the effluent discharge would also contain concentrations of the constituent DEHP at levels that exceed. However, current monitoring data do not indicate the presence of DEHP in the raw treated effluent. The Discharger also has recently conducted a study to determine possible sources of the contaminant. This study indicated that the previously submitted effluent monitoring data at the Laguna Regional WWTP for DEHP may be suspect due to sample contamination during sampling and testing resulting from the use of plastic tubing. Based on this information, Regional Water Board staff believe that there is not sufficient data to make a determination that there is reasonable potential for the Discharger to cause or contribute to an exceedance of the bis(2-ethylhexyl) phthalate criterion in the receiving water. Therefore in accordance with Section 2.2.2.A. of the Policy, no limit for bis(2-ethylhexyl) phthalate is included in the Order.

To confirm the absence of DEHP in treated effluent and further investigate the potential sources of sample contamination, the Discharger is directed to conduct weekly monitoring of the storage pond effluent, when discharging to surface water,. Should monitoring data indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of the human health criterion for bis(2-ethylhexyl) phthalate, the permit will be reopened to establish WQBELs for bis(2-ethylhexyl) phthalate and a pollution prevention plan to reduce the mass emission of bis(2-ethylhexyl) phthalate to surface waters.

- xi. **1,1,2-2 tetrachloroethane, n-nitrosodi-N-propylamine (DPN), 2,4-dinitrotoluene, 2-Chlorophenol, 2-chlorophenol, pentachlorophenol, beta-endosulfan.** Monitoring results submitted by the Discharger for February 16, 2000 indicated that the storage pond effluent contained 1,1,2-2 tetrachloroethane at a concentration of 1.2 µg/L. Monitoring results submitted by the Discharger for October 4, 1999 indicated that treatment facility effluent contained the following concentrations: n-nitrosodi-n-propylamine (88.4 µg/l), pentachlorophenol (264 µg/l), 2-chlorophenol (158 µg/l), Acenaphthene (142 µg/l), 2,4-dinitrotoluene (155 µg/l), pyrene (157 µg/l), 1,2,4-trichlorobenzene (130 µg/l), 4-chloro-3-methylphenol (197 µg/l), 4-nitrophenol (278 µg/l), and phenol (210 µg/l). All results of subsequent monitoring from the raw effluent or the storage pond effluent were reported as not detected for these pollutants.

A technical memorandum titled, "Fate of Organic Compounds in the Laguna Subregional Water Reclamation Facility," was prepared by CH2M Hill on behalf of the Discharger and submitted as part of the report of waste discharge to assess whether detections of these pollutants were a result of laboratory error. The evaluation consisted of a literature review of relevant information about the compounds and mathematical monitoring to hypothesize about the fate of these compounds in the treatment plant. The study concluded that the compounds are not in common usage and could not be present in the influent waste stream at a concentration that would produce the reported effluent concentrations.

Based on this study, the results of recent monitoring data, and best professional judgment, Regional Water Board staff has concluded that information is sufficient to support the determination that there is no reasonable potential for the discharge to cause or contribute to an exceedance of water quality criteria for these pollutants and WQBELs are not necessary. The Order directs the Discharger to conduct monthly monitoring of the storage pond effluent, when discharging to surface water, to confirm the continued absence of these pollutants from the discharge.

- xii. **Nitrate.** Table 3-2 of the Basin Plan limits the concentration in domestic or municipal water supply to 45 mg/l as total nitrate. This limitation is more commonly expressed as 10 mg/l as nitrate-nitrogen. This limit corresponds to the primary drinking water standard established by the California Department of Health Services

Results from storage pond effluent monitoring from January 2003 to March 2006 indicated a maximum effluent concentration of nitrate of 13.7 mg/l as N, in 131 samples. This result exceeds the applicable water quality standard for nitrate. Therefore, there is reasonable potential for nitrate and effluent limitations are needed.

4. WQBEL Calculations.

a. Non-Priority Pollutants

- i. **Nitrate.** Final WQBELs for nitrate have been determined using the methods described in Section 1.4 of the SIP, using the drinking water MCL of 10.0 mg/l (as N) as the applicable water quality criterion. If, as a result of a nutrient TMDL for the Laguna de Santa Rosa, a WLA for nitrate or total nitrogen is numerically lower than 10.0 mg/l (as N), then the final WQBELs for nitrate will be determined by an approved TMDL for the Laguna de Santa Rosa or will be zero (i.e., “no net loading”).

In accordance with Section 1.4 of the SIP, when the most stringent water quality objective is a human health objective, the AMEL is set equal to the effluent concentration allowance (ECA), which is equal to the water quality objective when no dilution is allowed.

- ii. **Biostimulatory Substances.**

For this Order, interim limitations were derived for TKN, nitrate and Total Phosphate based on treatment facility performance using the monitoring results of storage pond effluent samples from January 2003 to March 2006. Performance-based effluent limitations were calculated using the methods and concepts described in Appendix E of the TSD (Box E-1 and E-2). For TKN, nitrate and Total Phosphate, the upper 99% percentile limit of a delta lognormal sample distribution was calculated using available data reported as detected and nondetected, and assuming weekly monitoring of the discharge (i.e., $n = 4$). The upper 99th percentile limit of 3.0 mg/l was then established for TKN as a performance-based AMEL. For nitrate, the upper 99th percentile of 12.9 mg/l was used as the AMEL. Similarly for Total Phosphate, the upper 99th percentile limit of 3.1 mg/l was used as the AMEL. Table 10 provides the calculations performed to determine effluent limitations.

Table 10. WQBELs for TKN and TP

	TKN	Total Phosphate	Nitrate
Number of samples (k)	100	105	105
Number of Detects (k-r)	95	105	105
Number of non-detects (r)	5	0	0
Delta = r/k (δ)	0.05	0	0
Detection Limit (D)	0.2	0.1	0.2
Mean of natural logs (μ_v)	0.291	0.492	2.158
Number of samples per month (n)	4	4	4
σ_v^2	0.320	0.214	0.095
σ_v	0.566	0.462	0.309
Daily Average E(x)	1.501	1.821	9.073
Variance V(x)	0.973	0.789	8.240

	TKN	Total Phosphate	Nitrate
μ_n	0.355	0.570	2.193
σ_n^2	0.102	0.058	0.025
σ_n	0.320	0.240	0.157
Probability	0.99	0.99	0.99
ϕ for $z(0.99)$	2.326	2.326	2.326
Z factor ($z^* = \phi^{-1}[(0.99-\delta)/(1-\delta)]$)	2.302	2.303	2.303
$X_{.99} = \max[D, \exp(\mu_n + z^*\sigma_n)]$ (AMEL)	3.0	3.1	12.9

- b. **Priority Pollutants.** Final WQBELs for cyanide has been determined using the methods described in Section 1.4 of the SIP. Since the water quality objectives for copper, lead, and nickel are hardness-dependent and the hardness in the Laguna de Santa Rosa, Colgan Creek and Santa Rosa Creek varies significantly, final effluent limitations for copper, lead, and nickel are determined using formulas that are based on the hardness of the receiving water at the time the discharge is sampled. The calculations for copper, lead, and nickel below use a hardness concentration of 53.5 mg/l to determine the copper effluent limitation for that single hardness value. Calculations for a range of hardness concentrations, ranging from 5 to > 400 mg/l as CaCO_3 are included in Attachment E-2 (copper), Attachment E-3 (lead), and Attachment E-4 (nickel).

Step 1: For each water quality criterion/objective, an effluent concentration allowance (ECA) is calculated from the following equation to account for dilution and background levels of each pollutant.

$$\text{ECA} = C + D (C - B), \text{ where}$$

- C = the applicable water quality criterion (adjusted for receiving water hardness and expressed as total recoverable metal, if necessary)
D = the dilution credit
B = the background concentration

Because no credit is being allowed for dilution, $D = 0$, and therefore, $\text{ECA} = C$.

Step 2: For each ECA based on aquatic life criterion/objective, the long-term average discharge condition (LTA) is determined by multiplying the ECA times a factor (multiplier), which adjusts the ECA to account for effluent variability. The multiplier varies depending on the coefficient of variation (CV) of the data set and whether it is an acute or chronic criterion/objective. Table 1 of the SIP provides pre-calculated values for the multipliers based on the value of the CV. When the data set contains less than 10 sample results (which is the case for the Discharger), or 80 percent or more of the data are reported as non-detect (ND), the CV is set equal to 0.6. Derivation of the multipliers is presented in Section 1.4 of the SIP.

For example, from Table 1 of the SIP, multipliers for calculating LTAs at the 99th percentile occurrence probability for copper are 0.347 (acute multiplier) and 0.556 (chronic multiplier). LTAs are determined as follows.

Table 11. Calculations for Long Term Averages for Copper, Lead, Nickel, and Cyanide

Pollutant	ECA		ECA Multiplier		LTA (µg/L)	
	Acute	Chronic	Acute	Chronic	Acute	Chronic
Copper	7.77	5.47	0.347	0.556	2.70	3.04
Lead	36.8	1.43	0.321	0.527	11.82	0.76
Nickel	276.4	30.7	0.434	0.638	119.9	19.6
Cyanide	22.0	5.20	0.124	0.220	2.73	1.15

Step 3: WQBELs, including an average monthly effluent limitation (AMEL) and a maximum daily effluent limitation (MDEL) are calculated using the most limiting (the lowest) LTA. The LTA is multiplied times a factor that accounts for averaging periods and exceedance frequencies of the effluent limitations, and for the AMEL, the effluent monitoring frequency. For example, the CV for copper determined to be 0.546, and the sampling frequency was set equal to 4 (n = 4). The 99th percentile occurrence probability was used to determine the MDEL multiplier and a 95th percentile occurrence probability was used to determine the AMEL multiplier. From Table 2 of the SIP, the MDEL multiplier for copper is 2.88 and the AMEL multiplier is 1.50. Final WQBELs for copper and the other pollutants with reasonable potential are calculated as follows.

Table 12. Calculations for Final WQBELs for Copper, Lead, Nickel, and Cyanide

Pollutant	LTA	MDEL Multiplier	AMEL Multiplier	MDEL (µg/L)	AMEL (µg/L)
Copper	2.70	2.88	1.50	7.77	4.04
Lead	0.76	3.11	1.55	2.36	1.17
Nickel	19.6	2.31	1.37	45.2	26.8
Cyanide	1.15	8.06	2.67	9.24	3.05

Since the hardness of the receiving waters varies significantly, from 53.5 to 316 mg/l as CaCO₃, setting these water quality-based effluents were be more protective than required when the receiving water hardness is higher. Regional Water Board Staff have used best professional judgment to determine that effluent limitations for these pollutants for this Discharger should be based on the receiving water hardness at the time that the discharge samples are collected. Therefore, effluent limitations for copper lead and nickel, based on the receiving water hardness, are included in Attachment E-2, Attachment E-3, and Attachment E-4 of this Order.

Step 4: When the most stringent water quality criterion/objective is a human health criterion/objective, the AMEL is set equal to the ECA, and the MDEL is calculated by multiplying the ECA times the ratio of the MDEL multiplier to the AMEL multiplier. However, for the discharge, no priority pollutants where the lowest applicable water

quality criterion was a human health criterion was found to have reasonable potential. Therefore, there were no calculated WQBELs for these pollutants.

All WQBELs for the Discharger are summarized in the table below.

Table 13. Summary of Water Quality-based Effluent Limitations for Discharge Points 002, 003, 005, 006A, 006B, 008, 009, 012A, 012B, 014, 015, 016

Parameter	Units	Effluent Limitations ^a	
		Average Monthly	Maximum Daily
Copper	µg/L	See Attachment E-2	See Attachment E-2
Lead	µg/L	See Attachment E-3	See Attachment E-3
Nickel	µg/L	See Attachment E-4	See Attachment E-4
Cyanide	µg/L	3.05	9.23
Nitrate (as N)	mg/L	10.0	---
Total Phosphate	mg/L	3.0	---
Total Kjeldahl Nitrogen	mg/L	2.7	---

Notes:

- Final effluent limitations for copper, lead and cyanide shall replace the interim limitations on **May 1, 2010**.
- Final effluent limitations for copper, lead, and nickel are for total recoverable metal fraction and are determined using formulas that are based on the hardness of the receiving water at the time the discharge is sampled.
- Final effluent limitations for total phosphate and TKN shall replace interim limitations on **November 9, 2011**.

5. Whole Effluent Toxicity (WET)

This effluent limitation is derived from the CWA and the Basin Plan. The Basin Plan states that “All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.” For compliance with the Basin Plan’s narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the MRP (Attachment E, Section V.).

- Acute Aquatic Toxicity.** The Order implements Federal guidelines (Regions 9 & 10 Guidelines for Implementing Whole Effluent Toxicity Testing Programs) by requiring dischargers to conduct acute toxicity tests on a fish species and on an invertebrate to determine the most sensitive species. According to the USEPA manual, *Methods for Estimating the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/600/4-90/027F), the acceptable vertebrate species for the acute toxicity test are the fathead minnow, *Pimephales promelas* and the rainbow trout, *Oncorhynchus mykiss*. The acceptable invertebrate species for the acute toxicity test are the water flea, *Ceriodaphnia dubia*, *Daphnia magna*, and *D. pulex*. Based on effluent toxicity monitoring data from January 6, 1998 to April 14, 2003, the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan’s narrative toxicity objective. Consequently, acute toxicity effluent limitations have been established in this Order.

- b. **Chronic Aquatic Toxicity.** The SIP requires the use of short-term chronic toxicity tests to determine compliance with the narrative toxicity objectives for aquatic life in the Basin Plan. Adequate WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective. Attachment E of this Order requires quarterly chronic WET monitoring for demonstration of compliance with the narrative toxicity objective.

No dilution has been granted for the chronic condition. Therefore, chronic toxicity testing results exceeding 1.0 chronic toxicity unit (TUc) demonstrates the discharge is in violation of the chronic toxicity effluent limitation. If the discharge demonstrates a pattern of toxicity exceeding the effluent limitation, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE work plan to determine whether the discharge is contributing chronic toxicity to the receiving water. Chronic toxicity testing results from pond discharges are summarized below in Table 14.

Table 14. Whole Effluent Chronic Toxicity Testing Results

Location	Date	<i>Selenastrum capricornutum</i>		<i>Ceriodaphnia dubia</i>		<i>Pimaphales promelas</i>			
		Growth		Reproduction		Survival		Growth	
		NOEC	TUc	NOEC	TUc	NOEC	TUc	NOEC	TUc
06A	1/6/98	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
06A	4/7/98	100	< 1.0	25	4.0	25	4.0	< 25	---
06A	2/01	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
06A	1/7/02	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
06B	1/13/98	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
06B	5/13/98	100	< 1.0	85	1.2	100	< 1.0	100	< 1.0
06B	12/98	70	1.4	100	< 1.0	100	< 1.0	100	< 1.0
06B	1/99	100	< 1.0	100	< 1.0	100	< 1.0	50	2.0
06B	4/99	100	< 1.0	100	< 1.0	25	4.0	< 25	4.0
06B	2/00	50	2.0	100	< 1.0	100	< 1.0	100	< 1.0
06B	2/01	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
06B	11/01	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
06B	1/7/02	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
06B	4/1/02	100	< 1.0	85	1.2	100	< 1.0	100	< 1.0
06B	12/16/02	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
06B	1/6/03	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
06B	1/15/03	---	---	---	---	100	< 1.0	85	1.2
06B	4/14/03	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012A	1/6/98	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012A	10/98	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012A	2/99	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012B	1/13/98	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012B	12/98	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012B	1/99	100	< 1.0	100	< 1.0	100	< 1.0	< 25	---
012B	1/00	< 25	---	< 25	---	100	< 1.0	100	< 1.0
012B	1/01	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012B	12/5/01	100	< 1.0	100	< 1.0	50	2.0	50	2.0
012B	12/12/01	---	---	---	---	100	< 1.0	100	< 1.0
012B	3/11/02	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012B	12/17/02	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012B	1/6/03	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012B	1/17/03	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0

In addition to WET monitoring, Special Provisions VI.C.2.b. requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if a pattern of toxicity is demonstrated.

D. Final Effluent Limitations

1. Summary of Final Effluent Limitations Discharge Point 015

- a. **Advanced Wastewater Treatment.** From the record associated with the adoption of the AWT requirement, it is clear that treatment to a “pathogen-free” level was intended. The Resolution (No. 86-148) adopting the AWT requirement and the Basin Plan explain that zero discharge of municipal wastewater is preferable to ensure protection of beneficial uses (particularly municipal/domestic supply and body contact recreation), but that advanced treatment of wastewater is the “minimum acceptable.” The Resolution incorporates the recommendation of the DHS that “all municipal wastewater discharged to streams used for domestic water supply be treated to a ‘pathogen free’ level. ‘Pathogen free’ effluent is that which has been treated to advanced levels including chemical flocculation, coagulation, sedimentation, filtration, and disinfection.”

The DHS recommendation referred to in the Resolution explained that “the discharge [of wastewater] should be strengthened to require a pathogen free effluent as defined in Section 60315, Title 22 Wastewater Reclamation regulations.”

The Wastewater Reclamation Criteria in effect at the time stated:

“Section 60315. Nonrestricted Recreational Impoundment.

Reclaimed water used as a source of supply in a nonrestricted recreational impoundment shall be at all times an adequately disinfected, oxidized, coagulated, clarified, filtered wastewater. The wastewater shall be considered adequately disinfected if at some location in the treatment process the median number of coliform organisms does not exceed 2.2 per 100 mL and the number of coliform organisms does not exceed 23 per 100 mL in more than one sample within any 30-day period. The median value shall be determined from the bacteriological results of the last 7 days for which analyses have been completed.”

In sum, the Basin Plan amendment was intended to protect beneficial uses of the Russian River and tributaries, primarily domestic water supply and contact recreation. The adopting Resolution makes it clear that the amendment was aimed to eliminate pathogens (which pose a significant threat to domestic and recreation uses) from wastewater discharges. Even at that time, Title 22 of the CCR contained the definition

of pathogen-free treatment relied on by the resolution. By requiring that the standards be defined in individual permits, the Basin Plan contemplated they would be periodically refined during permit renewals. Accordingly, the use of Title 22 as it exists today is an appropriate means to define AWT wastewater quality for the protection of beneficial uses in the Russian River and tributaries

b. Biochemical Oxygen Demand and Suspended Solids.

- i. Concentration-based Limitations.** For the purpose of regulating municipal waste discharges from the Santa Rosa Subregional Water Reclamation Facility to the Laguna de Santa Rosa and its tributaries, advanced wastewater treatment is defined as achieving a monthly average concentration for BOD and suspended solids of 10 mg/l and a weekly average concentration of 15 mg/l. Monthly average and weekly average concentration-based limitations are retained from the previous Order. These effluent limitations are consistent with a “pathogen free” discharge, as explained Section IV.D.1.a and are technically achievable based on the capability of a tertiary system.

The daily maximum concentration-based effluent limitations for BOD and suspended solids have been omitted in the renewed Order. This permit change is governed by 40 CFR 122.44(l)(1), which provides that relaxations in effluent limitations are permitted where the circumstances justifying permit modification under 40 CFR 122.62 are present. Among the several enumerated grounds is that a permit may be renewed, reissued, or modified to contain a less stringent effluent limitation if new information has become available that was not previously available that justifies the application of a less stringent effluent limitation. The maximum daily concentration limitation presents a technology requirement and is neither applicable nor required for secondary treatment under 40 CFR 133. Accordingly, this limitation is omitted from this permit because the secondary treatment limitations promulgated subsequent to the issuance of the original permit present new information not available at that time that justifies the change. Concentration-based effluent limitations required under 40 CFR 133 remain in effect.

- ii. Mass-based Limitations.** Mass effluent limitations for BOD and suspended solids are retained from the previous Order and are required under 40 CFR 122.45(f).

The mass-based effluent limitations for BOD and suspended solids included in this Order have been modified to be numerically higher than those included in the Discharger’s previous Permit. This permit change is governed by 40 CFR 122.44(l)(1), which provides that relaxations in effluent limitations are permitted where the circumstances justifying permit modification under 40 CFR 122.62 are present. Among the several enumerated grounds is that, as provided in Section 122.62(a)(15), a modification is needed to “correct technical mistakes, such as errors in calculation, or mistaken interpretations of law made in determining

permit conditions.” Pursuant to 40 CFR 122.45(b), effluent limitations for POTWs are derived for the design flow of the WWTF. Mass-based effluent limitations in the previous Permit were calculated based on average dry weather design flow of the WWTF, but did not take into account peak wet weather flows. This Order correctly calculates mass-based effluent limitations applicable during periods of wet weather flow based on wet weather design flows. Mass-based effluent limitations are to be calculated in accordance with the following:

- 1) During wet weather conditions when the average weekly influent flow exceeds 21.34 mgd, the weekly mass-based effluent limitations for BOD and suspended solids are calculated based on the weekly wet weather design flow using the following formula: $8.34 \times Q \times C$, where Q is the peak weekly design flow of 64 mgd, C is the weekly concentration-based effluent limitation, and 8.34 is a conversion factor.
- 2) During wet weather conditions when the average monthly influent flow exceeds 21.34 mgd, the monthly mass-based effluent limitations for BOD and suspended solids are calculated based on the monthly wet weather design flow using the following formula: $8.34 \times Q \times C$, where Q is the peak monthly design flow of 47.3 mgd, C is the monthly concentration-based effluent limitation, and 8.34 is a conversion factor.

iii. Percent Removal. In describing the minimum level of effluent quality attainable by secondary treatment, federal regulations (40 CFR 133.102) state that the 30-day average percent removal shall not be less than 85 percent. If 85 percent removal of BOD and suspended solids must be achieved by a secondary treatment plant, it must also be achieved by a tertiary (i.e., treatment beyond secondary level) treatment plant. This Order contains a limitation requiring an average of 85 percent removal of BOD and suspended solids over each calendar month.

c. Total Coliform Organisms. Consistent with Section D.1.a, above, advanced treated wastewater shall be considered adequately disinfected if it is “pathogen free.” To demonstrate that the discharge is “pathogen free,” the discharge must be of a quality that meets the definition of disinfected tertiary recycled water in Section 60301.230 Title 22 CCR.

d. Hydrogen Ion (pH). Effluent limitations for hydrogen ion (pH) are retained from the previous Order and are minimum treatment standards for municipal dischargers as defined in 40 CFR 133.102.

2. Summary of Final Effluent Limitations Discharge Points 002, 003, 005, 06A, 06B, 008, 009, 012A, 012B, 014, 015, 016

a. Copper. Final effluent limitations for copper are based on the hardness of the upstream monitoring location at the time of discharge. Attachment E-2

- b. Cyanide.** This Order establishes a final AMEL of 3.05 µg/l and a final MDEL of 9.23 µg/l for cyanide. Final effluent limitations for cyanide were calculated in accordance with section 1.4 of the SIP.
- c. Lead.** Final effluent limitations for lead are based on the hardness of the upstream monitoring location at the time of discharge. Attachment E-3
- d. Nickel.** Final effluent limitations for nickel are based on the hardness of the upstream monitoring location at the time of discharge. Attachment E-4
- e. Nitrate.** Final effluent limitations for nitrate will be derived from the Waste Load Allocation determined by the nutrient TMDL for the Laguna de Santa Rosa. If a nutrient TMDL is not completed by **November 9, 2011**, this Order establishes a final AMEL of 10.0 µg/l for nitrate. The final effluent limitation for nitrate was calculated in accordance with section 1.4 of the SIP. If, as a result of a nutrient TMDL for the Laguna de Santa Rosa, a WLA for nitrate or total nitrogen is numerically lower than 10.0 mg/l (as N), then the final WQBELs for nitrate will be determined by an approved TMDL for the Laguna de Santa Rosa or will be zero (i.e., “no net loading”).
- f. Total Kjeldahl Nitrogen (TKN).** Final effluent limitations for TKN, or, alternatively, Total Nitrogen, will be derived from the Waste Load Allocation determined by the nutrient TMDL for the Laguna de Santa Rosa. If a nutrient TMDL is not completed by **November 9, 2011**, this Order establishes a final WQBEL of zero, or “no net loading.”
- g. Total Phosphate.** Final effluent limitations for Total Phosphate will be derived from the Waste Load Allocation determined by the nutrient TMDL for the Laguna de Santa Rosa. If a nutrient TMDL is not completed by **November 9, 2011**, this Order establishes a final WQBEL of zero, or no net loading.

Table 15. Summary of Final Technology-based Effluent Limitations Discharge Point 015

Parameter	Units	Effluent Limitations					Basis
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
BOD (20°C, 5-day)	mg/L	10	15	---	---	---	Basin Plan
Dry Weather	lbs/day	1,780	2,670	---	---	---	40 CFR 122.45(f)
Wet Weather	lbs/day	3,945	8,006	---	---	---	40 CFR 122.45(f)
Total Suspended Solids	mg/L	10	15	---	---	---	Basin Plan
Dry Weather	lbs/day	1,780	2,670	---	---	---	40 CFR 122.45(f)
Wet Weather	lbs/day	3,945	8,006	---	---	---	40 CFR 122.45(f)
Total Coliform Organisms	MPN/ 100 mL	23	2.2	---	---	240	Title 22, CCR
Hydrogen Ion	pH units	---	---	---	6	9	40 CFR 125.3(a)(1)
Percent Removal	Percent	85	---	---	---	---	40 CFR 125.3(a)(1)

Table 16. Summary of Final Water Quality-based Effluent Limitations Discharge Points 002, 003, 005, 006A, 006B, 008, 009, 012A, 012B, 014, 015, 016

Parameter	Units	Effluent Limitations					Basis
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Copper	µg/L	<i>Attachment E-2</i>	---	<i>Attachment E-2</i>	---	---	40 CFR 122.45(d)(1)(i)
Lead	µg/L	<i>Attachment E-3</i>	---	<i>Attachment E-3</i>	---	---	40 CFR 122.45(d)(1)(i)
Nickel	µg/L	<i>Attachment E-4</i>	---	<i>Attachment E-4</i>	---	---	40 CFR 122.45(d)(1)(i)
Cyanide	µg/L	3.05	---	9.23	---	---	40 CFR 122.45(d)(1)(i)
Nitrate (as N)	Final WQBELs for nitrate will be the WLA determined by an approved TMDL for the Laguna de Santa Rosa or zero (i.e., “no net loading”). If a nutrient TMDL is not completed, the final WQBELs will be 10 mg/l as a monthly average.						40 CFR 122.44(d) and the Basin Plan
Total Phosphate	Final WQBELs for Total Phosphate and Total Kjeldahl Nitrogen will be the WLAs determined by an approved TMDL for the Laguna de Santa Rosa or zero (i.e., “no net loading”).						40 CFR 122.44(d)
Total Kjeldahl Nitrogen							

E. Interim Effluent Limitations

The USEPA adopted the NTR and the CTR, which contains water quality standards applicable to this discharge. The SIP contains guidance on implementation of the NTR and CTR. The SIP, section 2.2.1, requires that if a compliance schedule is granted for a CTR or NTR constituent, the Regional Water Board shall establish interim requirements and dates for their achievement in the NPDES permit. The interim limitations must be based on current treatment plant performance or existing permit limitations, whichever is more stringent; include interim compliance dates separated by no more than one year, and; be included in the Provisions.

1. **Infeasibility Studies.** The Discharger submitted an Infeasibility Study for the Subregional Water Reclamation System on July 6, 2005 in response to a letter of intent from the Regional Water Board dated February 2, 2005, in which WQBELs were proposed for priority copper, lead, nickel, cyanide, beta endosulfan, gamma-BCH (lindane), and mercury. The study concluded that it is infeasible for the City to meet the proposed final effluent limitations and requested that the Regional Water Board establish interim effluent limitations for these pollutants in the Discharger's renewed NPDES permit. The Discharger's conclusions are based on a comparison of effluent monitoring data from the Laguna treatment facility to the proposed final effluent limitations for beta endosulfan, gamma-BCH (lindane), and mercury indicated in the letter of intent and final effluent limitations for copper, lead, and nickel based on a receiving water hardness of 53.5 mg/l as CaCO₃. The establishment of a compliance schedule and interim limitations is authorized under Sections 2.1 and 2.2 of the SIP upon receipt of additional information documenting possible source control efforts, pollutant minimization actions, and facility improvements.

Regional Water Board staff have reviewed the Infeasibility Study and recommend approval of the Discharger's request interim requirements, including effluent limitations, for copper, lead, cyanide. The SIP requires the numeric interim effluent limitation to be based on either current treatment facility performance, or on the previous Order's limitation, whichever is more stringent. For this Order, interim limitations were derived for copper, lead, and cyanide based on treatment facility performance using the monitoring results of effluent samples from 1998 through 2004. Based on information provided in the infeasibility report and best professional judgment, the determination of reasonable potential and the proposed WQBELs for beta endosulfan, gamma-BCH (lindane), and mercury were withdrawn, as explained in Section IV.C.3.d.

On July 10, 2006, the Discharger submitted an Infeasibility Study and proposed compliance schedule for nitrate. The study concluded that it is infeasible for the City to immediately meet the proposed final effluent limitations and requested that the Regional Water Board establish interim effluent limitations for these pollutants and a time schedule to meet the final effluent limitations for nitrate in the Discharger's renewed NPDES permit. The conclusion is based on a comparison of effluent monitoring data from permitted discharge locations from January 2000 to April 2006 and the proposed final limits. A compliance schedule is allowed because the nitrate water quality objective in the Basin Plan is newly interpreted as an effluent limitation rather than a receiving water limitation. The Discharger requested a five year time schedule to complete studies necessary to achieve compliance with final nitrate effluent limitations and demonstrated that this is the shortest feasible period of time for completing such studies based on an economic and financial feasibility analysis.

2. **Copper.** The Discharger is unable to immediately comply with the final limitations. Based on a review of results of samples collected from effluent storage ponds from 1998 to 2005, the discharge would have exceeded the final AMEL (based on hardness at the time of discharge) for 24 monthly samples and the final MDEL for 3 monthly samples. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion.

Interim performance-based effluent limitations were calculated using the methods and concepts described in Appendix E of the TSD. For copper, the upper 99th percentile limit of a delta lognormal sample distribution was calculated using available data reported as detected and nondetected and assuming weekly monitoring of the discharge. The upper 99th percentile limit of 16.3 µg/l was then established as an interim performance-based average monthly limitation. Other interim requirements and the time schedule to achieve final effluent limitations for copper are specified in Section VI.C.3.

3. **Cyanide.** The Discharger is unable to immediately comply with the final effluent limitations. The upper 99th percentile limit of a delta lognormal sample distribution of effluent data was calculated using the methods and concepts described in Appendix E of the TSD. The upper limit was then compared to the proposed final effluent limits for cyanide to determine whether the Discharger could reasonably be expected to immediately comply with the proposed final limitation. In addition, in the Report of Waste Discharge, the Discharger hypothesized that the presence of cyanide in the treatment facility's effluent might be a result of degradation of thiocyanate by chlorination and ultraviolet light irradiation to yield cyanide. To support this

theory, the Discharger cited a recent study conducted by the Water Environment Research Foundation, “Cyanide Formation and Fate in Complex Effluents and its Relation to Water Quality Criteria” that found that thiocyanate may contribute to the production of cyanide at wastewater treatment facilities. Therefore based on the Discharger’s inability to consistently meet the final limits based on previous treatment facility performance and on uncertainty surrounding the impact of the formation of thiocyanate on the concentration of cyanide in the discharge, the Regional Water Board has concluded that it is infeasible for the Discharger to immediately comply with the proposed final limitations for cyanide.

The upper 99th percentile limit of a delta lognormal sample distribution of effluent data was calculated using the methods and concepts described in Appendix E of the TSD. Interim performance-based effluent limitations were then established by using the upper 99th percentile limit of 14.3 µg/l as an interim performance-based average monthly limitation. Other interim requirements and the time schedule to achieve final effluent limitations for cyanide are specified in Section VI.C.4.

4. **Lead.** Regional Water staff reviewed of the results of samples collected from treated effluent and effluent storage ponds from 1998 to 2005. Because hardness data corresponding to effluent sample collection and a high percentage of sample results are reported as non-detected at a detection limit greater than the projected AMEL, it is unclear whether the Discharger can immediately comply with proposed WQBELs based on existing information. However, Regional Water Board staff simulated a compliance evaluation using the maximum effluent concentration (MEC) of 5.8 µg/l and receiving water hardness at the time copper samples were collected. The results of the simulation indicate that, had the proposed hardness-based effluent limitations been in place and assuming the MEC occurred every day of sampling, the discharge would have violated the hardness-based AMEL in 98 out of 104 samples. The MDEL would have been exceeded in 3 out of 104 samples. Based on this assessment, Regional Water Board staff concludes that it may be infeasible for the Discharger to immediately comply with the proposed final limitations for lead.

Interim performance-based effluent limitations were calculated using the methods and concepts described in Appendix E of the TSD. For lead, the upper 99th percentile limit of a delta lognormal sample distribution was calculated using available data reported as detected and nondetected and assuming weekly monitoring of the discharge. The upper 99th percentile limit of 5.6 µg/l was then established as an interim performance-based average monthly limitation.

5. **Nickel.** The upper 99% percentile limit of a delta lognormal sample distribution of effluent data was calculated using the methods and concepts described in Appendix E of the TSD. In a simulation, the upper limit was then compared to theoretical effluent limits for nickel had the proposed hardness-based effluent limitations been in place to determine whether the Discharger could reasonably be expected to immediately comply with the proposed final limitation. Regional Water Board staff have determined that based on the calculated upper 99th percentile limit of 14.3 µg/l, the Discharger will be able to immediately comply with the final effluent limitations. Accordingly, interim performance-based effluent limitations have not been established in this Order for nickel.
6. **Total Kjeldahl Nitrogen.** Concentration-based interim limitations for TKN are based on treatment facility performance using the monitoring results of storage pond effluent samples from January 2003 to May 2006. A description of the calculations for performance-based effluent limitations for TKN is contained in Section IV.C.4.a.ii of this Fact Sheet. The performance-based interim AMEL for TKN is 3.0 mg/l.
7. **Total Phosphate.** Concentration-based interim limitations for TKN are based on treatment facility performance using the monitoring results of storage pond effluent samples from January 2003 to May 2006. A description of the calculations for performance-based effluent limitations for TKN is contained in Section IV.C.4.a.ii of this Fact Sheet. The performance-based interim AMEL for Total Phosphate is 3.1 mg/l.
8. **Nitrate.** Concentration-based interim limitations for nitrate are based on existing treatment performance using effluent sample data from January 2003 to May 2006. Treatment plant performance was determined as the upper 99th percentile limit of a delta lognormal sample distribution of effluent data. A description of the calculations for performance-based effluent limitations for nitrate is contained in Section IV.C.4.a.ii of this Fact Sheet. The performance-based interim AMEL for nitrate is 12.9 mg/l.
9. **Total Nitrogen and Total Phosphate.** This Order establishes a seasonal mass-based interim limitation of 270,336 pounds per season for Total Nitrogen and a seasonal mass-based limitation of 48,142 pounds per season for Total Phosphate. These interim effluent limitations are calculated using available discharge monitoring data from storage ponds from November 2003, when the discharge of treated wastewater to the Geysers Steamfields was initiated, to May 2006. This period of time best characterizes the current discharge regime for the purpose of determining existing level of performance and interim performance-based limitations for Total Nitrogen and Total Phosphate.

Table 17 provides a summary of the monthly mass emission rates for Total Nitrogen and Total Phosphate for the months of reported discharge since November 2003. This summary forms the basis for the calculation of the current level of mass emission for the discharge season. The calculated seasonal mass emission rate, indicated in Table 18, is the sum of the maximum observed mass emission for each month in Table 17.

Table 17. Mass Emission Rates for Total Nitrogen and Total Phosphate

Month/Year	Location	Total Discharge Flow Mgal/ month	Total Nitrogen		Total Phosphate	
			Avg. Concentration mg/L	Mass Load lbs/month	Avg. Concentration mg/L	Mass Load lbs/month
Nov 2003	Kelly Pond	3.4	5.0	142	2.0	57
	LagunaWetlands	5.1	11.2	476	2.8	119
			Σ	618	Σ	176
Dec 2003	Kelly Pond	15	6.8	834	2.2	267
	D-Pond 36"	575	9.1	43,425	2.2	10,641
	LagunaWetlands	23	8.9	1,663	1.9	357
			Σ	45,921	Σ	11,264
Jan 2004	Kelly Pond	14	4.9	569	1.6	190
	D-Pond 36"	445	9.6	35,578	1.4	5,199
	LagunaWetlands	22	11.6	2,148	1.7	310
			Σ	38,295	Σ	5,699
Feb 2004	Kelly Pond	13	8.6	897	1.8	190
	D-Pond 36"	323	11.0	29,514	1.9	5,023
	LagunaWetlands	20	10.3	1,735	1.8	296
			Σ	32,147	Σ	5,510
March 2004	Kelly Pond	18	7.3	1,123	1.8	270
	D-Pond 36"	45	11.7	4,333	1.9	688
			Σ	5,457	Σ	958
Jan 2005	Kelly Pond	16	5.8	746	1.6	211
	D-Pond 36"	237	9.5	18,735	2.8	5,476
			Σ	19,480	Σ	5,687
Feb 2005	Kelly Pond	14	8.7	1,042	2.0	240
Mar 2005	Kelly Pond	19	7.4	1,191	1.8	285
	D-Pond 36"	370	9.7	30,026	2.1	6,549
			Σ	31,218	Σ	6,834
Apr 2005	D-Pond 36"	84	11.2	7,856	2.2	1,543
	LagunaWetlands	0.3	10.5	26	1.5	3.8
			Σ	7,882	Σ	1,547
May 2005	D-Pond 36"	162	10.3	13,933	2.3	3,111
Jan 2006	A-Pond	73	7.2	4,335	0.9	546
	D-Pond Incline	222	9.3	17,188	1.1	1,979
	D-Pond 36"	530	8.8	38,905	1.2	5,305
	Delta Pond 48"	313	7.6	19,800	1.2	3,082

Month/Year	Location	Total Discharge Flow Mgal/ month	Total Nitrogen		Total Phosphate	
			Avg. Concentration mg/L	Mass Load lbs/month	Avg. Concentration mg/L	Mass Load lbs/month
			Σ	94,161	Σ	14,023
Mar 2006	Delta Pond 48"	430	10.3	36,776	1.7	6,099
Apr 2006	Delta Pond 48"	484	10.9	43,797	1.7	6,660
	Brown Pond	68	5.3	2,984	1.0	563
			Σ	46,780	Σ	7,223
May 2006	Delta Pond 48"	6.8	11.2	635	1.8	102

Table 18. Monthly Maximum Mass Emission Rates

lbs/month	Nov	Dec	Jan	Feb	Mar	Apr	May	Total lbs/season
Total N	618	45,921	94,161	32,147	36,776	46,780	13,933	270,336
Total P	176	11,264	14,023	5,510	6,099	7,223	3,111	48,142

F. Land Discharge Specifications

This section of the standardized Order form is not applicable to the Santa Rosa Subregional Water Reclamation System.

G. Reclamation Specifications

1. **Filtration Rate.** This provision requires that wastewater be filtered at a rate that does not exceed 5 gallons per minute per square foot of filter surface area, and is based on the definition of filtered wastewater found in Title 22 Section 60301.320 of the CCR. The Title 22 definition is used as a reasonable performance standard to demonstrate that recycled water has been coagulated and adequately filtered for removal of wastewater pathogen and for conditioning of water prior to ultraviolet light disinfection processes. Properly designed and operated effluent filters will meet this standard.
2. **Turbidity.** This provision specifies that the turbidity of the filtered wastewater not exceed an average of 2 NTU within a 24-hour period, 5 NTU more than 5 percent of the time within a 24-hour period, and 10 NTU at any time, and is based on the definition of filtered wastewater found in Title 22 Section 60301.320 of the CCR. The Title 22 definition is used as a reasonable performance standard to ensure adequate removal of turbidity upstream of disinfection facilities. Properly designed and operated effluent filters will meet this standard. The point of compliance for the turbidity requirements is a point following the effluent filters and before discharge to the disinfection system.

3. **Reclamation Capacity.** This Order requires that the Discharger maintain, at a minimum, a total reclamation capacity of 4,015 million gallons for Geysers recharge, and maintain the capability to irrigate 2,590 million gallons per year. This provision implements the Regional Water Board's intent for continued application of the Interim Action Plan (1986-1990) for the Santa Rosa Area, which was included in the Basin Plan in 1987 through Regional Water Board Resolution No. 87-58. This Provision is retained from the previous Order.
4. **Reclamation Operation.** This Order requires that the Discharger operate its recycled water storage and disposal according to the *Geysers Discharge Management Plan*. This provision implements the Regional Water Board's intent for continued application of the Interim Action Plan (1986-1990) for the Santa Rosa Area, which was included in the Basin Plan in 1987 through Regional Water Board Resolution No. 87-58. This Provision is retained from the previous Order.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

1. CWA section 303(a-c) requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Regional Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that “[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional [Water] Board will apply to regional waters in order to protect the beneficial uses.” The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains Receiving Surface Water Limitations based on the Basin Plan numerical and narrative water quality objectives for biostimulatory substances, bacteria, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity.

B. Groundwater

1. The beneficial uses of the underlying ground water are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.
2. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, bacteria and radioactivity. The chemical constituent objective states groundwater shall not contain chemical constituents in excess of the limits specified in Code of California Regulations, Title 22, Division

- 4, Chapter 14, Article 4, Section 64435, Tables 2 and 3, and Section 64444.5 (Table 5) and listed in Table 3-2 of the Basin Plan. Numerical objectives for certain constituents for individual groundwaters are contained in Table 3-1 of the Basin Plan. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The bacteria objective prohibits coliform organisms at or above 1.1 MPN/100 ml.
3. Groundwater limitations are required to protect the beneficial uses of the underlying groundwater.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 CFR 122.48 requires all NPDES permits to specify recording and reporting of monitoring results. CWC Sections 13267 and 13383 authorize the regional water boards to require technical and monitoring reports. The MRP, Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Influent Monitoring

Influent wastewater monitoring for the WWTF is required in this Order. NPDES regulations at 40 CFR 133 define secondary treatment to include 85 percent removal of BOD₅ and TSS during treatment. Monitoring of influent for these pollutant parameters, in addition to effluent, is required to monitor compliance with this standard of performance. Influent monitoring requirements are contained in Attachment E, Section III.A, of the MRP.

B. Effluent Monitoring

Pursuant to the requirements of 40 CFR 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. In addition, routine monitoring of the effluent and the receiving water for priority pollutants is required to periodically assess the reasonable potential of the discharge to cause or contribute to an exceedance of CTR criteria. The frequency of routine monitoring for priority pollutants is determined using best professional judgment, with consideration given to the nature of the individual pollutant, the past record of detections in the effluent, and likelihood of the presence of the pollutant in the discharge. Effluent monitoring requirements are contained in Attachment E, Section IV of the MRP.

C. Whole Effluent Toxicity Testing Requirements

1. Acute Toxicity

- a. **Rationale.** Monthly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity (Effluent Limitations IV.A.1.e).
- b. **Test Frequency** - The USEPA recommends monthly WET testing for facilities listed as “major facilities” and quarterly testing for “minor facilities.” (*Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs*, USEPA, 1996) If WET limits are required, federal regulations (40 CFR 122.44(i)(2)) requires a minimum frequency of annual. For small municipalities, not designated as “major facilities,” the USEPA recommends at least one suite of tests to be conducted during the lifetime of the permit and prior to reissuance in order to assess reasonable potential.

This Order specifies monthly routine monitoring for acute toxicity because the facility is listed as a NPDES major facility, and the effluent has exhibited acute toxicity on at least three occasions since 1998.

- c. **Sample Location** – Representative effluent samples shall be collected at Discharge Points 002, 003, 005, 06A, 06B, 008, 009, 012A, 012B, 014, 015, and 016, when discharging to surface water.
- d. **Sample Type** – This Order specifies a 96-hour static renewal or static non-renewal test as described in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (USEPA Report No. EPA 600/4-90-027F, 4th edition or subsequent editions. Upon request, other methods may be approved by the Regional Water Board Executive Officer.
- e. **Test Species** – This Order requires the Discharger to conduct acute toxicity tests with the water flea, *Ceriodaphnia dubia*, and the rainbow trout, *Oncorhynchus mykiss*, for at least two suites of tests. For the first two suites of acute toxicity tests, the Discharger will determine the most sensitive aquatic species and continue to monitor with the most sensitive species. At least once every five years, the Discharger will re-screen to re-confirm the most sensitive species for the acute toxicity test.
- f. **Test Method** – The presence of acute toxicity shall be estimated as specified in effluent limitation IV.C.c and shall be consistent with *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (USEPA Report No. EPA

600/4-90-027F, 4th edition or subsequent editions), or other methods approved by the Executive Officer.

- g. **Dilution Water** – Acute toxicity tests shall be conducted using undiluted effluent.
- h. **Accelerated Monitoring** - The provision requires accelerated acute toxicity testing when a regular acute toxicity test result exceeds the single sample effluent limitation. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is a pattern of toxicity before requiring the implementation of a TRE. Under this provision, the Discharger is required to conduct at least two additional samples, one within 14 days, and one within 21 days of receiving the initial sample result. If any of the additional samples do not comply with the three sample median minimum limitation (90 percent survival) using that sample result and the two previous sample results, the Discharger shall initiate a TRE. If any test of a sample is ruled invalid, the Discharger will re-sample within 7 days following notification of test invalidation.

2. Chronic Toxicity

- a. **Rationale.** Quarterly chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.
- b. **Test Frequency** - The USEPA recommends monthly WET testing for facilities listed as "major facilities" and quarterly testing for "minor facilities." (*Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs*, USEPA, 1996) If WET limits are required, federal regulations (40 CFR 122.44(i)(2)) requires a minimum frequency of annual. For small municipalities, not designated as "major facilities," the USEPA recommends at least one suite of tests to be conducted during the lifetime of the permit and prior to reissuance in order to assess reasonable potential.

This Order specifies quarterly routine monitoring for chronic toxicity because the facility is listed as a NPDES major facility, and the effluent has exhibited chronic toxicity on at least six occasions since 1998.

- c. **Sample Location** - Representative effluent samples shall be collected at Discharge Points 002, 003, 005, 06A, 06B, 008, 009, 012A, 012B, 014, 015, and 016, when discharging to surface water.

- d. **Sample Type** – This Order specifies a 96-hour static renewal or static non-renewal test as described in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, EPA-821-R-02-013, October 2002.
- e. **Test Species** – This Order the Discharger to conduct short-term tests with the water flea, *Ceriodaphnia dubia* (survival and reproduction test), the fathead minnow, *Pimephales promelas* (larval survival and growth test), and the green alga, *Selenastrum capricornutum* (growth test). Initially, the Discharger is required to determine the most sensitive test species and monitor the discharge for chronic toxicity using that species for no more than five years, whereupon, the Discharger will repeat the screening procedure to confirm the most sensitive species. If reasonable potential to exceed the narrative water quality objective is found to exist, the Permit may be reopened to include a chronic toxicity limitation, as appropriate. The Basin Plan does not allow a mixing zone for this discharge; therefore, reasonable potential will be based on results of chronic toxicity tests from samples collected at the end of the pipe.
- f. **Test Method** – The presence of chronic toxicity shall be estimated as specified in and shall be consistent with *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, EPA-821-R-02-013, October, 2002.
- g. **Dilution water** - Control and dilution water should be receiving water at a location immediately upstream and outside the influent of the outfall. Laboratory water may be substituted for receiving water, as described in the manual, upon approval by the Regional Water Board Executive Officer.
- h. **Accelerated Monitoring** - The provision requires accelerated WET testing when a regular WET test result exceeds the effluent limitation or monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is a pattern of toxicity before requiring the implementation of a TRE. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete.

The provision requires accelerated monitoring consisting of four chronic toxicity tests every two weeks using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics*

Control, EPA/505/2-90-001, March 1991 (TSD). The TSD at page 118 states, “EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the time, a TRE should be required.” Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity (i.e. toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Regional Water Board Executive Officer may require that the Discharger initiate a TRE.

- i. **Monitoring Trigger.** A numeric toxicity monitoring trigger of $> 1.0 \text{ TUC}$ (where $\text{TUC} = 100/\text{NOEC}$) is applied in the provision, because this Order does not allow any dilution for the chronic condition. Therefore, a TRE is triggered when the effluent exhibits a pattern of toxicity at 100% effluent.

D. Receiving Water Monitoring

1. **Surface Water.** Receiving water monitoring is required to demonstrate compliance with the Receiving Water Limitations. Compliance with receiving water limitations will be demonstrated by grab and/or continuous monitoring samples or measurements taken upstream and at the point of discharge in the Laguna de Santa Rosa, Santa Rosa Creek, Colgan Creek, or the Laguna constructed wetlands, when discharging to surface water. For the purpose determining compliance with receiving water limitations, the point of discharge is defined as the location at which the treated effluent enters the receiving water body. Monitoring samples or measurements shall be obtained at the point of discharge before the monitored flow is diluted by any other waste stream, body of water, or substance and prior to initial or secondary mixing with ambient receiving waters. The upstream monitoring samples or measurements shall be representative of upstream conditions and shall be obtained at a location as close to the point of discharge as practicable.

The Regional Water Board allowed the Discharger the option to submit an alternative receiving water monitoring program within 180 days of the permit adoption date that could contain receiving water monitoring locations different than those prescribed above. The program must be acceptable to the Executive Officer and demonstrate compliance with the Order to the satisfaction of the Executive Officer. If an acceptable alternative program proposal is not timely received and approved by the Executive, the downstream receiving water monitoring locations specified in the MRP, and described in the previous paragraph, shall become effective immediately. In

the interim, the Discharger shall comply with the interim receiving water monitoring requirements using receiving water monitoring locations specified in Attachment E-5 of the MRP.

2. **Groundwater.** Groundwater monitoring of irrigated land is required to demonstrate compliance with the Groundwater Limitations. The Discharger is required to submit a groundwater monitoring program within 180 days of the effective date of this Order.

E. Other Monitoring Requirements

1. **Water Reclamation System (Tertiary Filters).** Monitoring of the surface loading rate and effluent turbidity of the tertiary filters is required to demonstrate compliance with Sections 60301.230 and 60301.320 of Title 22 CCR requirements for filtered and disinfected tertiary recycled water.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions.** In accordance with 40 CFR section 122.41 and 122.42, the Federal Standard Provisions provided in Attachment D of this Order apply to this discharge.
2. **Regional Water Board Standard Provisions.** In addition to the Federal Standard Provisions (Attachment D), the Discharger must comply with the Regional Water Board Standard Provisions provided in Standard Provisions VI.A.2.

B. Special Provisions

1. Reopener Provisions

- a. **Standards Revisions (Special Provisions VI.C.1.a).** Conditions that necessitate a major modification of a permit are described in 40 CFR section 122.62, which include the following:
 - i. When standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision. Therefore, if revisions of applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such revised standards.

- ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.
- b. **Reasonable Potential (Special Provisions VI.C.1.b).** This provision allows the Regional Water Board to modify, or revoke and reissue, this Order if present or future investigations demonstrate that the Discharger governed by this Permit is causing or contributing to excursions above any applicable priority pollutant criterion or objective or adversely impacting water quality and/or the beneficial uses of receiving waters.
- c. **Whole Effluent Toxicity (Special Provisions VI.C.1.c).** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a TRE. This Order may be reopened to include a numeric chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity limitation based on that objective.
- d. **Biostimulatory Substances (Special Provisions VI.C.1.d).** If a TMDL program is adopted, this Order may be reopened and the effluent limitations for TKN and Total Phosphate modified. If the Regional Water Board determines that an offset program or other program to minimize the impact of biostimulatory substances is feasible for dischargers subject to a NPDES permit, then this Order may be reopened to reevaluate the effluent limitations for TKN and Total Phosphate and the need for a program for the Discharger.
- e. **Filter Loading Rate (Special Provisions VI.C.1.e).** The Discharger is participating in a study being conducted by the California Department of Health Services (DHS) regarding filter loading rates for filtered wastewater. This Order may be reopened and modified to incorporate a revised filter loading rate in the event that DHS revises Title 22 regulations to require a different filter loading rate as a result of the study.
- f. **Special Studies (Special Provisions VI.C.1.f).** The Discharger is studying the feasibility of the use of water effect ratios and mixing zones to meet water quality objectives and effluent limitations for toxic pollutants. If these or other future water quality studies provide new information and a basis for determining that a permit condition or

conditions should be modified, the Regional Water Board may reopen this Order and make appropriate modifications to this Order.

- g. Alternative Final Limitations for Biostimulants (Special Provisions VI.C.1.g).** The Order establishes final water quality effluent limitations for biostimulants that will be derived from the waste load allocation determined by the nutrient TMDL for the Laguna de Santa Rosa. If a nutrient TMDL is not completed by November 9, 2011, this Order establishes a final WQBEL of no net loading. A "no net loading" effluent limit may be met by: 1) reducing the effluent concentration below detectable levels through source control and/or treatment; 2) reducing loads through recycling/reclamation; and/or 3) reducing loads elsewhere in the watershed by an amount at least equal to the amount discharged (and of equivalent bioavailability) through an approved offset program.

This reopener provides that if the Discharger completes a special study justifying alternative final numerical limitations for biostimulants that demonstrates that the discharge, if alternative limitations are allowed, will not cause, or have the potential to cause or contribute to an excursion of applicable water quality objectives for biostimulants in the Laguna de Santa Rosa or its tributaries, the Regional Water Board may reopen this Order and make modifications to the alternative final limit, in accordance with 40 CFR 122.62.

2. Special Studies and Additional Monitoring Requirements

- a. Toxicity Reduction Evaluations (Special Provisions VI.C.2.a).** The SIP requires the use of short-term chronic toxicity tests to determine compliance with the narrative toxicity objectives for aquatic life in the Basin Plan. Attachment E of this Order requires chronic toxicity monitoring for demonstration of compliance with the narrative toxicity objective.

In addition to WET monitoring, Special Provisions VI.C.2.a. requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The TRE is initiated by evidence of a pattern of toxicity demonstrated through the additional effluent monitoring provided as a result of an accelerated monitoring program.

TRE Guidance. The Discharger is required to prepare a TRE Work Plan in accordance with USEPA guidance. Numerous guidance documents are available, as identified below:

1. *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*, (EPA/833B-99/002), August 1999.
2. *Generalized Methodology for Conducting Industrial TREs*, (EPA/600/2-88/070), April 1989.
3. *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures*, Second Edition, EPA 600/6-91/005F, February 1991.
4. *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I*, EPA 600/6-91/005F, May 1992.
5. *Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting acute and Chronic Toxicity*, Second Edition, EPA 600/R-92/080, September 1993.
6. *Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity*, Second Edition, EPA 600/R-92/081, September 1993.
7. *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition, EPA-821-R-02-012, October 2002.
8. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, EPA-821-R-02-013, October 2002.
9. *Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-001, March 1991

3. Best Management Practices and Pollution Prevention

- a. **Pollution Minimization Plan.** Provision VI.C.3 is included in this Order as required by Section 2.4.5 of the SIP. The Regional Water Board includes standard provisions in all NPDES permits requiring development of a Pollutant Minimization Program when there is evidence that a toxic pollutant is present in effluent at a concentration greater than an applicable effluent limitation.

4. Compliance Schedules

a. Copper

The Discharger currently conducts a comprehensive monitoring program to comply with the existing copper limitation. Monitoring samples are collected monthly from each storage pond when discharging from that pond. In addition, the Discharger monitors the treatment plant influent and effluent copper concentrations on a quarterly basis. The Discharger also implements a rigorous pretreatment program to monitor and control influent copper loading from industrial sources.

The final effluent limitations for copper in this Order are based on a mathematical formula that will effectively establish a more stringent limitation than in the previous Order. To comply with the more stringent copper limitations, the Discharger has committed to implementing addition measures as interim requirements (Table 19), in addition to meeting performance-based interim limitations.

The intent of the compliance schedule is to further evaluate potential reductions in effluent copper concentrations through source control. If this approach does not yield significant copper reductions, then the Discharger will evaluate the feasibility of treatment plant upgrades to remove copper from the treated effluent.

Table 19. Copper Compliance Schedule

Task	Compliance Date
Discharger shall complete an evaluation to determine potential sources of copper	June 1, 2007
Discharger shall complete an evaluation of local limits for copper and, if appropriate, revise local limits, implemented pursuant to its Pretreatment program, based on identified sources	December 1, 2007
Discharger shall update its source control program, if necessary, to reflect any revision local limits. This step will include providing a period of time to allow industrial users to come into compliance with their new limits.	June 1, 2008
Discharger shall evaluate compliance with new local limits and evaluate whether further copper reductions are necessary	May 31, 2009
Discharger shall, if necessary, complete an	December 1, 2009

Task	Compliance Date
engineering treatment feasibility studies examining the feasibility, costs and benefits of different treatment options that may be required to remove copper.	
Discharger shall comply with the final effluent limitations for copper.	May 1, 2010

The Discharger is also developing a discharger-specific Water Effects Ratio (WER) that would adjust the CTR water quality criterion for copper to a criterion appropriate for the Laguna de Santa Rosa and other receiving waters. If the discharger-specific WER is approved by the Regional Water Board and the site-specific criterion is higher than the CTR criterion such that it can be determined that the discharge does not have reasonable potential to cause and exceedance of the site-specific criterion, then WQBELs for copper would be amended accordingly.

b. Lead

The Discharger currently monitors the lead concentration in treatment plant influent and effluent and, when discharging, its storage pond discharge. The Discharger also implements a pretreatment source control program for lead to monitor and control influent loading from industrial sources.

This Order establishes new WQBELs for lead. The Discharger has sufficiently demonstrated that it cannot immediately meet these final effluent limitations. To comply with the new lead effluent limitations, the Discharger has committed to implementing addition measures as interim requirements (Table 20), in addition to meeting performance-based interim limitations.

The intent of the compliance schedule is to further evaluate potential reductions in effluent lead concentrations through the new identification of possible sources of lead. If this approach does not yield significant lead reductions, then the Discharger will evaluate the feasibility of treatment plant upgrades to remove lead from the treated effluent.

Table 20. Lead Compliance Schedule

Task	Compliance Date
Discharger shall complete an evaluation to determine potential sources of lead	June 1, 2007
Discharger shall complete an evaluation of	December 1, 2007

Task	Compliance Date
local limits for lead and, if appropriate, revise local limits, implemented pursuant to its Pretreatment program, based on identified sources	
Discharger shall update its source control program, if necessary, to reflect any revision local limits. This step will include providing a period of time to allow industrial users to come into compliance with their new limits.	June 1, 2008
Discharger shall evaluate compliance with new local limits and evaluate whether further lead reductions are necessary	May 31, 2009
Discharger shall, if necessary, complete an engineering treatment feasibility studies examining the feasibility, costs and benefits of different treatment options that may be required to remove lead.	December 1, 2009
Discharger shall comply with the final effluent limitations for lead.	May 1, 2010

c. Cyanide

The Discharger currently monitors the cyanide concentration in treatment plant influent and effluent and, when discharging, its storage pond discharge. The Discharger also implements a rigorous pretreatment program to monitor and control influent loading of metals and other industrial and commercial pollutants, including cyanide, from industrial sources.

This Order establishes new WQBELs for cyanide. The Discharger has sufficiently demonstrated that it cannot immediately meet these final effluent limitations. To comply with the new cyanide effluent limitations, the Discharger has committed to implementing additional measures as interim requirements (Table 21), in addition to meeting performance-based interim limitations.

The intent of the compliance schedule is to assess existing and potential sources of cyanide in the treatment plant influent and to further evaluate the possibility that cyanide concentrations detected in the effluent are produced as a result of chemical reactions during treatment. Once all sources of cyanide are identified, the Discharger will implement additional source control activities to monitor and control cyanide, and, if necessary,

thiocyanate in the treatment plant influent. More detail about the activities included in the compliance schedule are contained in *Infeasibility Study (for Anticipated Limits for Priority Pollutants)*, submitted by the Discharger on July 6, 2005.

Table 21. Cyanide Compliance Schedule

Task	Compliance Date
Discharger shall complete an evaluation of analytical methodology for cyanide.	November 1, 2007
Discharger shall complete an evaluation of the effect of thiocyanate in its influent and its contribution to total cyanide in its effluent.	November 1, 2007
Discharger shall complete an evaluation to determine potential industrial users of thiocyanate.	November 1, 2008
Discharger shall, if necessary, develop and implement a source control program to control thiocyanate in its influent.	November 1, 2009
Discharger shall comply with the final effluent limitations for cyanide.	May 1, 2010

d. Nitrate

The Discharger currently monitors the nitrate concentration in treatment plant influent and final effluent and, when discharging, its storage pond discharge. The Discharger has undertaken significant steps to reduce nitrogen concentrations in its effluent and to reduce nutrient loading to the Laguna de Santa Rosa. Activities currently underway or completed include improvements to activated sludge process to achieve partial denitrification, increased water recycling, diversion of effluent to the Geysers Steamfields, and development and implementation of programs involving source control, water conservation, and stormwater.

This Order establishes a new WQBEL for nitrate, based on the drinking water standard of 45 mg/l (or 10 mg/l as N). The Discharger has sufficiently demonstrated that it cannot immediately meet these final effluent limitations. To comply with the new nitrate effluent limitations, the Discharger has committed to implementing additional measures as interim requirements (Table 22), in addition to meeting performance-based interim limitations. The tasks in the compliance schedule for nitrate also incorporate measures to meet potential, numerically lower final limitations for biostimulatory substances, a pollutant group that includes nitrate. Final effluent limitations for nitrate will be determined by the

waste load allocation derived from the nutrient TMDL for the Laguna de Santa Rosa , which will be based on biostimulatory WLA or the established drinking water standard whichever is numerically lower, or zero (i.e., “no net loading”).)

Table 22. Nitrate Compliance Schedule

Task	Compliance Date
Discharger shall submit a written progress report summarizing 1) the status of the preliminary treatment plant improvement evaluations, the treatment plant optimization evaluation, and the mixing zone evaluation, and 2) the status of source control efforts to reduce nitrate loading in the Laguna de Santa Rosa.	May 20, 2007
Discharger shall submit a report describing the status of source control efforts to reduce nitrate loading in the Laguna de Santa Rosa, and 2) the findings of the treatment plant improvement and optimization evaluations and the preliminary mixing zone evaluation, and 3) any additional efforts to meet final limitations.	February 20, 2008
Annually, the Discharger shall submit a written progress report discussing its progress in complying with final effluent limitations.	September 20, 2008 September 20, 2009 September 20, 2010 September 20, 2011

e. Biostimulatory Substances

The Discharger currently monitors the nitrate concentration in treatment plant influent and final effluent and, when discharging, its storage pond discharge. The Discharger has undertaken significant steps to reduce nitrogen concentrations in its effluent and to reduce nutrient loading to the Laguna de Santa Rosa. Activities currently underway or completed include improvements to activated sludge process to achieve partial denitrification, increased water recycling, diversion of effluent to the Geysers Steamfields, and development and implementation of programs involving source control, water conservation, and stormwater.

This Order establishes new WQBELs for biostimulatory substances, expressed in the Order as Total Kjeldahl Nitrogen and Total Phosphate. The Discharger has sufficiently demonstrated that it cannot immediately

meet these final effluent limitations. To comply with the new effluent limitations, the Discharger has committed to implementing additional measures as interim requirements (Table 23), in addition to meeting performance-based interim limitations that are calculated to prevent further degradation of the receiving waters as a result of the discharge.

The intent of the proposed compliance schedule for biostimulatory substances is to require the Discharger to document incremental progress toward meeting final effluent limitations for biostimulatory substances.

Table 23. Compliance Schedule for Biostimulatory Substances

Task	Compliance Date
Annually, the Discharger shall submit a written progress report discussing its progress in complying with final effluent limitations and documenting measurable reduction in nutrient loading to the Laguna de Santa Rosa.	September 20, 2007 September 20, 2008 September 20, 2009 September 20, 2010 September 20, 2011

5. Construction, Operation, and Maintenance Specifications

40 CFR 122.41 (e) requires proper operation and maintenance of permitted wastewater systems and related facilities to achieve compliance with permit conditions. An up-to-date operation and maintenance manual, as required by Provision VI.C.4.a.i. of the permit, is an integral part of a well-operated and maintained facility.

6. Special Provisions for Municipal Facilities (POTWs Only)

The Regional Water Board includes standard provisions in all NPDES permits for municipal wastewater treatment facilities regarding wastewater collection systems, sanitary sewer overflows, source control, sludge handling and disposal, operator certification, and adequate capacity. These provisions assure efficient and satisfactory operation of municipal wastewater collection and treatment systems.

a. Wastewater Collection System

i. Statewide General WDRs for Sanitary Sewer Systems

The Discharger is required to enroll under Statewide General WDRs for Sanitary Sewer Systems (State Water Board Order No. 2006-0003-DWQ) by November 2, 2006. Once enrolled, the

Discharger will be required under terms of the General Order to develop and implement a Sewer System Management Plan.

All NPDES permits for POTWs currently include federally required standard conditions to mitigate discharges (40 CFR 122.41(d)), to report non-compliance (40 CFR 122.41(l)(6) and (7)), and to properly operate and maintain facilities (40 CFR 122.41(e)). This provision is consistent with these federal requirements.

ii. Sanitary Sewer Overflows

Order No. 2006-0003-DWQ includes a Reporting Program that requires the Discharger, beginning May 2, 2007, to report SSOs to an online SSO database administered through the California Integrated Water Quality System (CIWQS) and telefax reporting when the online SSO database is not available. The goal of these provisions is to ensure appropriate and timely response by the Discharger to sanitary sewer overflows to protect public health and water quality.

The Order also includes reporting provisions (Provision VI.C.6.(a)(ii) and Attachment D subsections I.C., I.D., V.E. and V.H. to ensure adequate and timely notifications are made to the Regional Water Board and appropriate local, state, and federal authorities.

The Order establishes oral reporting limits for SSOs. SSOs less than 100 gallons are not required to be reported orally, while SSOs greater than or equal to 100 gallons must be reported orally to the Regional Water Board. Inevitably, minor amounts of untreated or partially treated wastewater may escape during carefully executed routine operation and maintenance activities. This Order establishes a reasonable minimum volume threshold for oral notifications. It has been the experience of Regional Water Board staff that SSOs to land that are less than 100 gallons are not likely to have a material effect on the environment or public health. Larger volumes in excess of 100 gallons may indicate a lack of proper operation and maintenance and due care, and pose more of a threat to the environment or public health. All SSOs, regardless of volume, must be electronically reported pursuant to State Water Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.

- b. **Pretreatment of Industrial Waste.** Section 402(b)(8) of the CWA requires that POTWs receiving pollutants from significant industrial sources subject to section 307(b) standards establish an industrial pretreatment program to ensure compliance with these standards. The implementing regulations at 40 CFR 403.8(a) state, “any POTW (or combination of POTWs operated by the same authority) with a total design flow greater than 5 million gallons per day (mgd) and receiving from industrial users pollutants which pass through or interfere with the operation of the POTW or are otherwise subject to pretreatment standards will be required to establish a POTW pretreatment program unless the NPDES State exercises its option to assume local responsibilities as provided in 403.10(e).” The Santa Rosa Subregional Water Reclamation Facility is subject to pretreatment standards as described in section 307(b) of the CWA and 40 CFR 403.8(a).
- c. **Sludge Requirements.** The disposal or reuse of wastewater treatment screenings, sludges, or other solids removed from the liquid waste stream is regulated by 40 CFR Parts 257, 258, 501, and 503, and the State Water Board promulgated provisions of Title 27, Division 2, of the CCR. The Discharger has indicated that that all screenings, sludges, and solids removed from the liquid waste stream, excluding biosolids that are beneficially reused through land application and/or composting, are disposed of at a municipal solid waste landfill in accordance with all applicable regulations.

The discharge of biosolids through land application is not regulated under this Order. Instead, the Discharger is required to obtain coverage under the State Water Board Order No. 2000-10-DWQ, General Waste Discharge Requirements for the Discharge of Biosolids to Land as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities (General Order). Coverage under the General Order, as opposed to coverage under this NPDES permit or individual WDRs, implements a consistent statewide approach to regulating this waste discharge.

- d. **Discharge Notification.** This Provision requires the Discharger to notify the Regional Water Board orally in the event that discharge of treated effluent to surface waters is expected to occur when the flow in the Russian River has not reached 1,000 cubic feet per second. Although it is anticipated that the Discharger will discharge to surface waters during these critical low flow periods only under unusual circumstances, notification provided to the Regional Water Board will allow the Regional Water Board an opportunity to monitor the impact of the discharge to ensure that water quality objectives are achieved and beneficial uses are protected.
- e. **Operator Certification.** This provision requires the Facility to be operated by supervisors and operators who are certified as required by Section 3680, Title 23, CCR.
- f. **Adequate Capacity.** The goal of this provision is to ensure appropriate and timely planning by the Discharger to ensure adequate capacity for the protection of public health and water quality.

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, North Coast Region (Regional Water Board) is considering the issuance of waste discharge requirements that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the Santa Rosa Subregional Water Reclamation System. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the publication in the Press Democrat on April 21, 2006 and through posting on the Regional Water Board's Internet site at <http://www.waterboards.ca.gov/northcoast/agenda/pending.html> beginning on April 24, 2006. The initial public comment period ended on May 24, 2006. Comments received by May 24, 2006 resulted in substantial changes to the proposed Order. The public comment period reopened on July 17, 2006.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments shall be submitted either in person or by mail to the Executive Office at the Regional Water Board at the address above on the cover page of this Order.

In order to receive a full evaluation and response from staff and to be considered by the Regional Water Board, written comments on the substantial changes must be received at the Regional Water Board offices by 5:00 p.m. on August 15, 2006.

C. Public Hearing

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: September 19-20, 2006
Time: 1:30 p.m. on September 19, or as soon as possible thereafter as noticed in the final agenda
Location: Regional Water Board Office
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our web address is <http://www.waterboards.ca.gov/northcoast> where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The Report of Waste Discharge (ROWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (707) 576-2220.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Charles Reed at (707) 576-2752.

ATTACHMENT F-1 – BIBLIOGRAPHY

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16. Great Lakes Environmental Center (GLEC), *Draft Compilation of Existing Guidance for the Development of Site-Specific Water Quality Objectives in the State of California*, June 30, 2003.
17. Helsel, D.R. *Nondetects and Data Analysis: statistics for censored environmental data*. Wiley & Sons, 2005.
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20. USEPA, *Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001 (TSD)*, March 1991
21. USEPA, *Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs*, May 31, 1996
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23. USEPA, *Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)*, EPA/821-B-00-004, July 2000.
24. USEPA, *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California (California Toxics Rule)*, 40 CFR Part 131, Federal Register/Volume 65, No. 97, May 18, 2000
25. USEPA, *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications under the National Pollutant Discharge Elimination System Program*, June 30 2000.
26. Wickham, D., and Robert Rawson, *Phosphate Loading and Eutrophication in the Laguna de Santa Rosa*, January 2000.

ATTACHMENT F-2 Reasonable Potential Analysis– Summary Table

CTR #	Constituent	CTR WQ Objectives (µg/l)		Raw WWTF Effluent		Discharge Locations 06A, 06B, 012A, and 012B		Maximum Background or Minimum DL (µg/l)	RPA Results WQBEL needed?
		Aquatic Life	Human Health	No. of Detects Total	MEC or Minimum DL (µg/l)	No. of Detects Total	MEC or Minimum DL (µg/l)		
1.	Antimony	--	14	2/31	0.4	0/27	2	0.4	NO
2.	Arsenic	150	--	4/31	3	11/27	4	3.4	NO
3.	Beryllium	NONE		0/31	0.06	0/27	0.2	0.06	NO
4.	Cadmium	1.5	--	1/31	0.06	0/27	0.3	0.04	NO
5a.	Chromium (Total)	124	--	3/31	12	15/27	21	3.3	NO
5b.	Chromium (VI)	11.4	--	0/20	2	---	---	2	NO
6.	Copper	5.5	1,300	21/31	14	24/27	18	25.6 ³	YES
7.	Lead	1.4	--	4/31	5.8	4/27	5.8	1.8	YES
8.	Mercury	--	0.05	4/31	0.3	0/27	0.05	0.01	NO, BPJ
9.	Nickel	30.7	610	20/31	7.3	25/27	32	9.1	YES
10.	Selenium	5	--	0/31	0.5	0/27	5	0.5	NO
11.	Silver	1.4	--	2/31	0.07	0/27	0.5	0.02	NO
12.	Thallium	--	1.7	0/31	0.03	0/27	2	0.06	NO
13.	Zinc	70.5	--	30/31	35	27/27	44	24	NO
14.	Cyanide	5.2	700	14/31	51	6/27	12	2.8	YES
15.	Asbestos	--	7,000 mf/l	0/4	ND	ns	ns	0.2 mf/l	NO
16.	2, 3, 7, 8-TCDD (Dioxin)	--	0.013 pg/l	0/35	0.268 pg/l	0/21	637 pg/l	0.637 pg/l	NO
17.	Acrolein	--	320	0/31	0.36	0/23	1	0.36	NO
18.	Acrylonitrile	--	0.059	0/31	0.14	0/23	1	0.14	NO
19.	Benzene	--	1.2	0/31	0.08	0/23	0.5	0.08	NO
20.	Bromoform	--	4.3	0/31	0.099	0/23	0.5	0.099	NO

³ Excluding a likely outlier result of 66 ug/l for a copper sample on 4/5/00.

CITY OF SANTA ROSA
SANTA ROSA SUBREGIONAL WATER RECLAMATION FACILITY
ORDER NO. R1-2005-0045
NPDES NO. CA0022764

CTR #	Constituent	CTR WQ Objectives (µg/l)		Raw WWTF Effluent		Discharge Locations 06A, 06B, 012A, and 012B		Maximum Background (µg/l)	RPA Results WQBEL needed?
		Aquatic Life	Human Health	No. of Detects Total	MEC or Minimum DL (µg/l)	No. of Detects Total	MEC or Minimum DL (µg/l)		
21.	Carbon Tetrachloride	--	0.25	0/31	0.19	0/23	0.5	0.19	NO
22.	Chlorobenzene	--	680	0/31	0.075	0/23	0.5	0.075	NO
23.	Chlorodibromomethane	--	0.401	0/31	0.11	0/23	0.5	0.11	NO
24.	Chloroethane	NONE		0/31	0.29	0/23	0.5	0.29	NO
25.	2-Chloroethylvinyl Ether	NONE		0/29	0.31	0/23	0.5	1	NO
26.	Chloroform	NONE		11/31	10.3	0/23	0.5	0.24	NO
27.	Dichlorobromomethane	--	0.56	3/31	1.8	0/23	0.5	0.1	NO, BPJ
28.	1,1-Dichloroethane	NONE		0/31	0.14	0/23	0.5	0.14	NO
29.	1,2-Dichloroethane	--	0.38	0/31	0.18	0/23	0.5	0.21	NO
30.	1,1-Dichloroethylene	--	0.057	0/28	0.19	ns	---	0.19	NO
31.	1,2-Dichloropropane	--	0.52	0/31	0.13	0/23	0.5	0.13	NO
32.	1,3-Dichloropropylene	--	10	0/31	0.12	ns	---	0.12	NO
33.	Ethylbenzene	--	3,100	0/31	0.11	0/23	0.5	0.2	NO
34.	Methyl Bromide	--	48	0/28	0.2	0/23	0.5	0.2	NO
35.	Methyl Chloride	NONE		0/28	0.36	0/29	0.5	0.14	NO
36.	Methylene Chloride	--	4.7	0/31	0.16	0/23	0.5	0.16	NO
37.	1,1,2,2-Tetrachloroethane	--	0.17	0/31	0.057	0/23	0.5	0.057	NO
38.	Tetrachloroethylene	--	0.8	0/31	0.21	0/23	0.5	0.21	NO
39.	Toluene	--	6800	0/31	0.11	0/23	0.5	0.36	NO
40.	1,2-Trans-Dichloroethylene	--	700	0/31	0.16	0/23	0.5	0.16	NO
41.	1,1,1-Trichloroethane	NONE		0/31	0.13	0/23	0.5	0.13	NO
42.	1,1,2-Trichloroethane	--	0.6	0/31	0.12	0/23	0.5	0.12	NO
43.	Trichloroethylene	--	2.7	0/31	0.13	0/23	0.5	0.13	NO
44.	Vinyl Chloride	--	2	0/31	0.17	0/23	0.5	0.17	NO
45.	2-Chlorophenol	--	120	0/32	0.4	0/27	5	0.4	NO

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CTR #	Constituent	CTR WQ Objectives (µg/l)		Raw WWTF Effluent		Discharge Locations 06A, 06B, 012A, and 012B		Maximum Background (µg/l)	RPA Results WQBEL needed?
		Aquatic Life	Human Health	No. of Detects Total	MEC or Minimum DL (µg/l)	No. of Detects Total	MEC or Minimum DL (µg/l)		
46.	2,4 Dichlorophenol	--	93	0/36	0.3	0/27	5	0.3	NO
47.	2,4-Dimethylphenol	--	540	0/32	0.3	0/27	5	0.3	NO
48.	2-Methyl-4,6-Dinitrophenol	--	13.4	0/32	0.4	0/27	10	0.4	NO
49.	2,4-Dinitrophenol	--	70	0/28	0.3	0/27	5	0.3	NO
50.	2-Nitrophenol	NONE		0/32	0.3	0/27	5	0.3	NO
51.	4-Nitrophenol	NONE		0/32	0.2	0/27	5	0.2	NO
52.	3-methyl-4-chlorophenol	NONE		0/28	1	0/27	5	1	NO
53.	Pentachlorophenol	15	0.28	0/32	0.4	0/27	5	0.4	NO
54.	Phenol	--	21000	0/32	0.2	0/27	5	0.2	NO
55.	2,4,6 Trichlorophenol	--	2.1	0/32	0.2	0/26	5	0.2	NO
56.	Acenaphthene	--	1200	0/32	0.17	0/27	5	0.17	NO
57.	Acenaphthylene	NONE		0/32	0.03	0/27	5	0.03	NO
58.	Anthracene	--	9600	0/32	0.16	0/27	5	0.16	NO
59.	Benzidine	--	0.00012	0/32	0.3	0/27	20	0.3	NO
60.	Benzo(a)Anthracene	--	0.0044	0/32	0.12	0/27	5	0.12	NO
61.	Benzo(a)Pyrene	--	0.0044	0/32	0.09	0/27	5	0.09	NO
62.	Benzo(b)Fluoranthene	--	0.0044	0/32	0.11	0/27	5	0.11	NO
63.	Benzo(ghi)Perylene	NONE		0/32	0.06	0/27	5	0.06	NO
64.	Benzo(k)Fluoranthene	--	0.0044	0/32	0.16	0/27	5	0.16	NO
65.	Bis(2-Chloroethoxy) Methane	NONE		0/32	0.3	0/27	5	0.3	NO
66.	Bis(2-Chloroethyl) Ether	--	0.031	0/32	0.3	0/27	5	0.3	NO
67.	Bis(2-Chloroisopropyl) Ether	--	1400	0/32	1	0/27	5	1	NO
68.	Bis(2-Ethylhexyl) Phthalate	--	1.8	0/32	0.3	3/27	570	0.3	NO, BPJ
69.	4-Bromophenyl Phenyl Ether	NONE		0/28	0.4	0/27	5	0.5	NO
70.	Butylbenzyl Phthalate	--	3000	0/32	0.4	0/27	5	0.4	NO

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CTR #	Constituent	CTR WQ Objectives (µg/l)		Raw WWTF Effluent		Discharge Locations 06A, 06B, 012A, and 012B		Maximum Background (µg/l)	RPA Results WQBEL needed?
		Aquatic Life	Human Health	No. of Detects Total	MEC or Minimum DL (µg/l)	No. of Detects Total	MEC or Minimum DL (µg/l)		
71.	2-Chloronaphthalene	--	1700	0/28	0.30	ns	---	0.30	NO
72.	4-Chlorophenyl Phenyl Ether	NONE		0/32	0.4	0/27	5	0.4	NO
73.	Chrysene	--	0.0044	0/32	0.14	0/27	5	0.14	NO
74.	Dibenzo(a,h) Anthracene	--	0.0044	0/32	0.04	0/27	5	0.04	NO
75.	1,2 Dichlorobenzene	--	2700	0/31	0.11	0/23	5	0.11	NO
76.	1,3 Dichlorobenzene	--	400	0/31	0.11	0/23	5	0.11	NO
77.	1,4 Dichlorobenzene	--	400	9/31	1.3	0/23	5	0.081	NO
78.	3,3'-Dichlorobenzidine	--	0.04	0/32	0.4	0/27	5	0.4	NO
79.	Diethyl Phthalate	--	23000	0/32	0.4	0/27	5	0.4	NO
80.	Dimethyl Phthalate	--	313000	0/32	0.4	0/27	5	0.4	NO
81.	Di-n-Butyl Phthalate	--	2700	0/32	0.4	1/27	5.7	0.4	NO, BPJ
82.	2,4-Dinitrotoluene	--	0.11	0/32	0.3	0/27	5	0.3	NO
83.	2,6-Dinitrotoluene	NONE		0/32	0.3	0/23	5	0.3	NO
84.	Di-n-Octyl Phthalate	NONE		0/32	0.4	0/27	5	0.4	NO
85.	1,2-Diphenylhydrazine	--	0.04	0/25	0.6	0/27	5	0.3	NO
86.	Fluoranthene	--	300	0/32	0.03	0/27	5	0.03	NO
87.	Fluorene	--	1300	0/32	0.02	0/27	5	0.02	NO
88.	Hexachlorobenzene	--	0.00075	0/32	0.4	0/27	5	0.4	NO
89.	Hexachlorobutadiene	--	0.44	0/32	0.2	0/27	5	0.2	NO
90.	Hexachlorocyclopentadiene	--	240	0/32	0.1	0/27	5	0.1	NO
91.	Hexachloroethane	--	1.9	0/32	0.2	0/27	5	0.2	NO
92.	Indeno(1,2,3-cd)Pyrene	--	0.0044	0/32	0.04	0/27	5	0.04	NO
93.	Isophorone	--	8.4	0/32	0.3	0/27	5	0.3	NO
94.	Naphthalene	NONE		1/32	7.5	0/27	5	0.05	NO, BPJ
95.	Nitrobenzene	--	17	0/32	0.3	0/27	5	0.3	NO

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CTR #	Constituent	CTR WQ Objectives (µg/l)		Raw WWTF Effluent		Discharge Locations 06A, 06B, 012A, and 012B		Maximum Background (µg/l)	RPA <u>Results</u> WQBEL needed?
		Aquatic Life	Human Health	No. of <u>Detects</u> Total	MEC or Minimum DL (µg/l)	No. of <u>Detects</u> Total	MEC or Minimum DL (µg/l)		
96.	N-Nitrosodimethylamine	--	0.00069	0/32	0.4	0/27	5	0.4	NO
97.	N-Nitrosodi-n-Propylamine	--	0.005	0/32	0.3	0/27	5	0.3	NO
98.	N-Nitrosodiphenylamine	--	5.0	0/32	0.4	0/27	5	0.4	NO
99.	Phenanthrene	NONE		0/32	0.03	0/27	5	0.03	NO
100.	Pyrene	--	960	0/32	0.03	0/27	5	0.03	NO
101.	1,2,4-Trichlorobenzene	NONE		0/32	0.3	0/27	5	0.3	NO
102.	Aldrin	3	0.00013	0/32	0.003	0/18	0.04	0.003	NO
103.	α-BHC	--	0.0039	0/32	0.002	0/18	0.03	0.002	NO
104.	β-BHC	--	0.014	0/32	0.001	0/18	0.05	0.001	NO
105.	γ-BHC (Lindane)	0.95	0.019	1/32	0.02	0/18	0.04	0.001	NO, BPJ
106.	δ-BHC	NONE		0/32	0.001	0/18	0.05	0.001	NO
107.	Chlordane	0.0043	0.00057	0/32	0.005	0/18	0.1	0.005	NO
108.	4,4'-DDT	0.001	0.00059	0/32	0.001	0/18	0.05	0.001	NO
109.	4,4'-DDE	--	0.00059	0/32	0.001	0/18	0.04	0.001	NO
110.	4,4'-DDD	--	0.00083	0/32	0.001	0/18	0.05	0.001	NO
111.	Dieldrin	--	0.00014	0/32	0.002	0/18	0.02	0.002	NO
112.	Endosulfan (alpha)	0.056	110	0/32	0.003	0/18	0.02	0.003	NO
113.	Endosulfan (beta)	0.056	110	1/32	0.08	0/18	0.02	0.001	NO, BPJ
114.	Endosulfan Sulfate	--	110	0/32	0.001	0/18	0.05	0.001	NO
115.	Endrin	0.036	0.76	0/32	0.002	0/18	0.05	0.002	NO
116.	Endrin Aldehyde	--	0.76	0/32	0.002	0/18	0.1	0.002	NO
117.	Heptachlor	0.0038	0.00021	0/32	0.003	0/18	0.03	0.003	NO
118.	Heptachlor Epoxide	0.0038	0.00010	0/32	0.002	0/18	0.04	0.002	NO
119-125	PCBs	0.014	0.00017	0/32	0.1	0/18	0.1	0.1	NO
126.	Toxaphene	0.0002	0.00073	0/32	0.2	0/18	1	0.21	NO

Hardness mg/l as CaCO3	CCC 4-Day Ave. (ug/l)	CMC 1-Hour Ave. (ug/l)	Copper Concentration Limitations (Total Recoverable)			
			0.562CCC	0.354CMC	AMEL (ug/L)	MDEL (ug/L)
5	0.7	0.8	0.4	0.3	0.4	0.8
10	1.3	1.6	0.7	0.6	0.8	1.6
15	1.8	2.3	1.0	0.8	1.2	2.3
20	2.4	3.1	1.3	1.1	1.6	3.1
25	2.9	3.8	1.6	1.3	2.0	3.8
30	3.3	4.5	1.9	1.6	2.4	4.5
35	3.8	5.2	2.1	1.8	2.7	5.2
40	4.3	5.9	2.4	2.1	3.1	5.9
45	4.7	6.6	2.6	2.3	3.5	6.6
50	5.2	7.3	2.9	2.6	3.8	7.3
55	5.6	8.0	3.1	2.8	4.2	8.0
60	6.0	8.7	3.4	3.1	4.6	8.7
65	6.5	9.3	3.6	3.3	4.9	9.3
70	6.9	10.0	3.9	3.5	5.3	10.0
75	7.3	10.7	4.1	3.8	5.6	10.7
80	7.7	11.3	4.3	4.0	6.0	11.4
85	8.1	12.0	4.6	4.3	6.3	12.0
90	8.5	12.7	4.8	4.5	6.7	12.7
95	8.9	13.3	5.0	4.7	7.0	13.4
100	9.3	14.0	5.2	5.0	7.4	14.0
105	9.7	14.7	5.5	5.2	7.7	14.7
110	10.1	15.3	5.7	5.4	8.1	15.3
115	10.5	16.0	5.9	5.7	8.4	16.0
120	10.9	16.6	6.1	5.9	8.8	16.7
125	11.3	17.3	6.3	6.1	9.1	17.3
130	11.7	17.9	6.6	6.3	9.5	18.0
135	12.1	18.6	6.8	6.6	9.8	18.8
140	12.4	19.2	7.0	6.8	10.1	19.3
145	12.8	19.9	7.2	7.0	10.5	19.9
150	13.2	20.5	7.4	7.3	10.8	20.5
155	13.6	21.2	7.6	7.5	11.2	21.2
160	13.9	21.8	7.8	7.7	11.5	21.8
165	14.3	22.4	8.0	7.9	11.8	22.5
170	14.7	23.1	8.3	8.2	12.2	23.1
175	15.0	23.7	8.5	8.4	12.5	23.8
180	15.4	24.4	8.7	8.6	12.8	24.4
185	15.8	25.0	8.9	8.8	13.2	25.0
190	16.1	25.6	9.1	9.1	13.5	25.7
195	16.5	26.3	9.3	9.3	13.8	26.3
200	16.9	26.9	9.5	9.5	14.1	26.8
205	17.2	27.5	9.7	9.7	14.4	27.4
210	17.6	28.2	9.9	10.0	14.7	28.0
215	17.9	28.8	10.1	10.2	15.0	28.5
220	18.3	29.4	10.3	10.4	15.3	29.1
225	18.7	30.1	10.5	10.6	15.6	29.7
230	19.0	30.7	10.7	10.9	15.9	30.2
235	19.4	31.3	10.9	11.1	16.2	30.8
240	19.7	31.9	11.1	11.3	16.5	31.4
245	20.1	32.6	11.3	11.5	16.8	31.9
250	20.4	33.2	11.5	11.8	17.1	32.5
255	20.8	33.8	11.7	12.0	17.4	33.0
260	21.1	34.4	11.9	12.2	17.7	33.6
265	21.5	35.1	12.1	12.4	18.0	34.1
270	21.8	35.7	12.3	12.6	18.3	34.7
275	22.1	36.3	12.4	12.9	18.5	35.2
280	22.5	36.9	12.6	13.1	18.8	35.8
285	22.8	37.6	12.8	13.3	19.1	36.3
290	23.2	38.2	13.0	13.5	19.4	36.9
295	23.5	38.8	13.2	13.7	19.7	37.4
300	23.9	39.4	13.4	14.0	20.0	37.9
310	24.5	40.6	13.8	14.4	20.5	39.0
320	25.2	41.9	14.2	14.8	21.1	40.1
330	25.9	43.1	14.5	15.3	21.7	41.2
340	26.5	44.3	14.9	15.7	22.2	42.2
350	27.2	45.6	15.3	16.1	22.8	43.3
360	27.9	46.8	15.7	16.6	23.3	44.3
370	28.5	48.0	16.0	17.0	23.9	45.4
380	29.2	49.2	16.4	17.4	24.4	46.4
400	30.5	51.7	17.1	18.3	25.5	48.5
>400	30.5	51.7	17.1	18.3	25.5	48.5

CCC = Criteria Continuous Concentration
= exp (0.8545[ln(hardness)] - 1.702)

CMC = Criteria Maximum Concentration
= exp (0.9422[ln(hardness)] - 1.700)

AMEL = Average Monthly Effluent Limitation
= 1.49[min(0.562CCC, 0.354CMC)]

MDEL = Maximum Daily Effluent Limitation
= 2.83[min(0.562CCC, 0.354CMC)]

Hardness – hardness of the receiving water
at the time the discharge is sampled.

Hardness mg/l as CaCO3	CCC		CMC		Lead Concentration Limitations (Total Recoverable)	
	4-Day Ave. (ug/l)	1-Hour Ave. (ug/l)	0.527CCC (ug/l)	0.321CMC (ug/l)	AMEL (ug/L)	MDEL (ug/L)
5	0.1	1.8	0.0	0.6	0.1	0.1
10	0.2	4.4	0.1	1.4	0.1	0.3
15	0.3	7.3	0.1	2.3	0.2	0.5
20	0.4	10.5	0.2	3.4	0.3	0.7
25	0.5	14.0	0.3	4.5	0.4	0.9
30	0.7	17.6	0.4	5.7	0.6	1.1
35	0.8	21.5	0.4	6.9	0.7	1.4
40	1.0	25.4	0.5	8.2	0.8	1.6
45	1.2	29.5	0.6	9.5	0.9	1.9
50	1.3	33.8	0.7	10.8	1.1	2.2
55	1.5	38.1	0.8	12.2	1.2	2.4
60	1.7	42.6	0.9	13.7	1.4	2.7
65	1.8	47.2	1.0	15.1	1.5	3.0
70	2.0	51.8	1.1	16.6	1.7	3.3
75	2.2	56.6	1.2	18.2	1.8	3.6
80	2.4	61.5	1.3	19.7	2.0	3.9
85	2.6	66.4	1.4	21.3	2.1	4.2
90	2.8	71.4	1.5	22.9	2.3	4.6
95	3.0	76.5	1.6	24.6	2.4	4.9
100	3.2	81.6	1.7	26.2	2.6	5.2
105	3.4	86.9	1.8	27.9	2.8	5.5
110	3.6	92.2	1.9	29.6	2.9	5.9
115	3.8	97.5	2.0	31.3	3.1	6.2
120	4.0	103.0	2.1	33.1	3.3	6.6
125	4.2	108.5	2.2	34.8	3.5	6.9
130	4.4	114.0	2.3	36.6	3.6	7.3
135	4.7	119.6	2.5	38.4	3.8	7.6
140	4.9	125.3	2.6	40.2	4.0	8.0
145	5.1	131.0	2.7	42.1	4.2	8.4
150	5.3	136.8	2.8	43.9	4.4	8.7
155	5.6	142.6	2.9	45.8	4.5	9.1
160	5.8	148.5	3.0	47.7	4.7	9.5
165	6.0	154.4	3.2	49.6	4.9	9.9
170	6.3	160.4	3.3	51.5	5.1	10.2
175	6.5	166.5	3.4	53.4	5.3	10.6
180	6.7	172.5	3.5	55.4	5.5	11.0
185	7.0	178.7	3.7	57.4	5.7	11.4
190	7.2	184.8	3.8	59.3	5.9	11.8
195	7.4	191.0	3.9	61.3	6.1	12.2
200	7.7	197.3	4.1	63.3	6.3	12.6
205	7.9	203.6	4.2	65.4	6.5	13.0
210	8.2	209.9	4.3	67.4	6.7	13.4
215	8.4	216.3	4.4	69.4	6.9	13.8
220	8.7	222.8	4.6	71.5	7.1	14.2
225	8.9	229.2	4.7	73.6	7.3	14.6
230	9.2	235.7	4.8	75.7	7.5	15.1
235	9.4	242.3	5.0	77.8	7.7	15.5
240	9.7	248.9	5.1	79.9	7.9	15.9
245	10.0	255.5	5.2	82.0	8.1	16.3
250	10.2	262.1	5.4	84.1	8.3	16.7
255	10.5	268.8	5.5	86.3	8.6	17.2
260	10.7	275.5	5.7	88.4	8.8	17.6
265	11.0	282.3	5.8	90.6	9.0	18.0
270	11.3	289.1	5.9	92.8	9.2	18.5
275	11.5	295.9	6.1	95.0	9.4	18.9
280	11.8	302.8	6.2	97.2	9.6	19.3
285	12.1	309.7	6.4	99.4	9.9	19.8
290	12.3	316.6	6.5	101.6	10.1	20.2
295	12.6	323.6	6.6	103.9	10.3	20.7
300	12.9	330.6	6.8	106.1	10.5	21.1
310	13.4	344.7	7.1	110.6	11.0	22.0
320	14.0	358.9	7.4	115.2	11.4	22.9
330	14.5	373.2	7.7	119.8	11.9	23.8
340	15.1	387.7	8.0	124.5	12.3	24.8
350	15.7	402.3	8.3	129.1	12.8	25.7
360	16.2	417.0	8.6	133.8	13.3	26.6
370	16.8	431.8	8.9	138.6	13.7	27.6
380	17.4	446.7	9.2	143.4	14.2	28.5
390	18.0	461.7	9.5	148.2	14.7	29.5
400	18.6	476.8	9.8	153.1	15.2	30.5
>400	18.6	476.8	9.8	153.1	15.2	30.5

CCC = Criteria Continuous Concentration
= exp (0.8545[ln(hardness)] - 1.702)

CMC = Criteria Maximum Concentration
= exp (0.9422[ln(hardness)] - 1.700)

AMEL = Average Monthly Effluent Limitation
= 1.55[min(0.527CCC,0.321CMC)]

MDEL = Maximum Daily Effluent Limitation
= 3.11[min(0.527CCC,0.321CMC)]

Hardness - the hardness of the receiving
water at the time the discharge is sampled.

Hardness mg/l as CaCO3	CCC (ug/l)	CMC 1-Hour Ave. (ug/l)	Nickel Concentration Limitations (Total Recoverable)			
			0.637CCC	0.432CMC	AMEL (ug/L)	MDEL (ug/L)
5	4.1	37.2	2.6	16.1	3.8	6.1
10	7.4	66.9	4.7	28.9	6.5	11.0
15	10.5	94.3	6.7	40.7	9.1	15.5
20	13.4	120.2	8.5	51.9	11.7	19.8
25	16.1	145.2	10.3	62.7	14.1	23.9
30	18.8	169.4	12.0	73.2	16.4	27.8
35	21.5	193.0	13.7	83.4	18.7	31.7
40	24.0	216.1	15.3	93.4	21.0	35.5
45	26.5	238.8	16.9	103.1	23.2	39.2
50	29.0	261.0	18.5	112.8	25.3	42.9
55	31.5	282.9	20.0	122.2	27.5	46.5
60	33.9	304.5	21.6	131.6	29.5	50.0
65	36.2	325.9	23.1	140.8	31.6	53.5
70	38.6	347.0	24.6	149.9	33.7	57.0
75	40.9	367.8	26.0	158.9	35.7	60.4
80	43.2	388.5	27.5	167.8	37.7	63.8
85	45.5	408.9	29.0	176.6	39.7	67.2
90	47.7	429.2	30.4	185.4	41.6	70.5
95	49.9	449.3	31.8	194.1	43.6	73.8
100	52.2	469.2	33.2	202.7	45.5	77.1
105	54.4	488.9	34.6	211.2	47.4	80.3
110	56.5	508.6	36.0	219.7	49.3	83.6
115	58.7	528.1	37.4	228.1	51.2	86.8
120	60.9	547.4	38.8	236.5	53.1	89.9
125	63.0	566.7	40.1	244.8	55.0	93.1
130	65.1	585.8	41.5	253.1	56.8	96.2
135	67.2	604.8	42.8	261.3	58.7	99.4
140	69.3	623.7	44.2	269.4	60.5	102.5
145	71.4	642.5	45.5	277.5	62.3	105.6
150	73.5	661.2	46.8	285.6	64.1	108.6
155	75.6	679.8	48.1	293.7	66.0	111.7
160	77.6	698.3	49.5	301.6	67.7	114.7
165	79.7	716.7	50.8	309.6	69.5	117.8
170	81.7	735.0	52.1	317.5	71.3	120.8
175	83.7	753.3	53.3	325.4	73.1	123.8
180	85.8	771.4	54.6	333.3	74.8	126.8
185	87.8	789.5	55.9	341.1	76.6	129.7
190	89.8	807.5	57.2	348.9	78.4	132.7
195	91.8	825.5	58.5	356.6	80.1	135.6
200	93.8	843.3	59.7	364.3	81.8	138.6
205	95.7	861.1	61.0	372.0	83.6	141.5
210	97.7	878.9	62.2	379.7	85.3	144.4
215	99.7	896.6	63.5	387.3	87.0	147.3
220	101.6	914.2	64.7	394.9	88.7	150.2
225	103.6	931.7	66.0	402.5	90.4	153.1
230	105.5	949.2	67.2	410.1	92.1	156.0
235	107.5	966.6	68.5	417.6	93.8	158.8
240	109.4	984.0	69.7	425.1	95.5	161.7
245	111.3	1001.3	70.9	432.6	97.2	164.5
250	113.2	1018.6	72.1	440.0	98.8	167.4
255	115.2	1035.8	73.4	447.5	100.5	170.2
260	117.1	1052.9	74.6	454.9	102.2	173.0
265	119.0	1070.0	75.8	462.3	103.8	175.8
270	120.9	1087.1	77.0	469.6	105.5	178.6
275	122.8	1104.1	78.2	477.0	107.1	181.4
280	124.6	1121.1	79.4	484.3	108.8	184.2
285	126.5	1138.0	80.6	491.6	110.4	187.0
290	128.4	1154.8	81.8	498.9	112.0	189.7
295	130.3	1171.7	83.0	506.2	113.7	192.5
300	132.1	1188.4	84.2	513.4	115.3	195.3
310	135.8	1221.9	86.5	527.8	118.6	200.8
320	139.5	1255.1	88.9	542.2	121.8	206.2
330	143.2	1288.2	91.2	556.5	125.0	211.7
340	146.9	1321.2	93.6	570.8	128.2	217.1
350	150.5	1354.0	95.9	584.9	131.4	222.5
360	154.2	1386.6	98.2	599.0	134.5	227.8
370	157.8	1419.2	100.5	613.1	137.7	233.2
380	161.4	1451.5	102.8	627.1	140.8	238.5
400	168.5	1515.9	107.4	654.9	147.1	249.1
>400	30.5	51.7	17.1	18.3	25.5	48.5

CCC = Criteria Continuous Concentration
= exp [0.8460[ln(hardness)] + 0.0584]

CMC = Criteria Maximum Concentration
= exp [0.8460[ln(hardness)] + 2.255]

AMEL = Average Monthly Effluent Limitation
= 1.37[min(0.637CCC, 0.432CMC)]

MDEL = Maximum Daily Effluent Limitation
= 2.32[min(0.637CCC, 0.432CMC)]

Hardness – hardness of the receiving water
at the time the discharge is sampled.

ATTACHMENT G – WATER RECLAMATION REQUIREMENTS AND PROVISIONS

A. Water Reclamation Findings

1. The California Department of Health Services (DHS) has established statewide reclamation criteria in Chapter 3, Division 4, Title 22, CCR, Sections 60301 through 60355 (hereinafter Title 22) for the use of recycled water for irrigation, impoundments, cooling water, and other purposes. The DHS has also established Guidelines for Use of Reclaimed Water. This Order implements the Title 22 recycled water criteria.
2. In 1996, the State Water Board and DHS set forth principles, procedures, and agreements to which the agencies committed themselves, relative to the use of recycled water in California, in a document titled Memorandum of Agreement Between the Department of Health Services and the State Water Resources Control Board on the Use of Reclaimed Water (MOA). This Order is consistent with the MOA.
3. This Permit implements Section 13523.1 of the CWC which authorizes issuance of a Master Reclamation Permit to suppliers or distributors, or both, of recycled water in lieu of issuing individual water reclamation requirements to each recycled water user.
4. The Discharger is required to develop and keep updated, an Engineering Report for the use of recycled water as required by Sections 60313(d), 60314, and 60323 of Title 22. This Title 22 Engineering Report must be approved by DHS and the Regional Water Board prior to delivery of disinfected, advanced treated effluent to any recycled water use site requiring tertiary effluent as required by Title 22. The Title 22 Engineering Report shall describe how the Discharger will operate the treatment facilities and reclamation system to comply with all applicable rules and regulations, including Title 22 and this Order. The Title 22 Engineering Report shall also discuss the possibility of incidental runoff from recycled water use areas and describe measures the Discharger will take to minimize this possibility.

Incidental runoff is defined as runoff that is unintentional (e.g., accidental breakage of a sprinkler head) and not associated with negligence on the part of the Discharger or the recycled water user. These incidents are typically infrequent, low volume, accidental, not due to a pattern of neglect or lack of oversight, and are promptly addressed. The Regional Water Board recognizes that such minor violations are unavoidable and present a low risk to water quality. Incidental runoff incidents shall be summarized in the Discharger's quarterly recycled water monitoring report. Enforcement action shall be considered for inadequate response by the Discharger to incidental runoff incidents, repeated runoff incidents that were within the Discharger's control, where incidental runoff directly causes violations of water quality objectives, incidents that create a condition of pollution or nuisance, and discharges that reach surface water in violation of Discharge Prohibitions III. For III.H and/or Water Reclamation Requirements in Attachment G, Section B.4 or B.6 of this Order.

5. This Order authorizes the Discharger to reuse treated municipal wastewater that complies with effluent limitations contained in Section IV of the Order for uses that have been addressed in an approved Title 22 Engineering Report and for which recycled water user agreements have been negotiated.
6. Effluent Limitations included in this Order will assure compliance with requirements contained in Title 22 and the DHS/State Water Board MOA.
7. The use of recycled water is exempt from the requirements of Title 23, CCR, Section 2510, et. seq., (hereinafter Chapter 15) and Title 27, CCR, pursuant to Section 2511(b) based on the following:
 - a. The Board is issuing a Master Reclamation Permit, and
 - b. The reclamation complies with the Basin Plan, and
 - c. The recycled water does not need to be managed according to 22 CCR, Division 4.5, Chapter 11, as a hazardous waste.
8. The Regional Water Board consulted with DHS, the Sonoma County Health Department, and the local Mosquito Abatement District and considered any recommendations regarding public health aspects for this use of recycled water.

B. Water Reclamation Requirements

1. The use of recycled water shall not result in unreasonable waste of water.
2. The use of recycled water shall not create a condition of pollution or nuisance as defined in CWC Section 13050(m).
3. The Discharger shall be responsible to ensure that all users of recycled water comply with the terms and conditions of this Permit and with any rules, ordinances, or regulations adopted by the Discharger.
4. Recycled water shall not be applied to irrigation areas during periods when uncontrolled runoff may occur.
5. Recycled water shall be applied in such a manner so as not to exceed vegetative demand or field capacity.
6. Recycled water shall not be allowed to escape the recycled use area(s) in the form of surface runoff. [CCR Title 22, Section 60310(e)]

7. Direct or windblown spray, mist, or runoff from irrigation areas shall not enter dwellings, designated outdoor eating areas, or food handling facilities. [CCR Title 22, Section 60310(e)(2)]
8. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff. [CCR Title 22, Section 60310(e)(3)]
9. There shall be no bypassing of untreated or partially treated wastewater from the recycled water plant or any intermediate processes to the point of use. [CCR Title 22, Section 60331]
10. All recycled water equipment, pumps, piping, valves, and outlets shall be appropriately marked to differentiate them from potable facilities.
11. The California Health and Safety Code, Section 116815, requires that "all pipes installed above or below the ground, on or after June 1, 1993, that are designed to carry recycled water, shall be colored purple or distinctively wrapped with purple tape." Section 116815 also contains exemptions that apply to municipal facilities that have established a labeling or marking system for recycled water used on their premises and for water delivered for agricultural use.

The Discharger shall prepare a report documenting either compliance with this requirement and/or containing a workplan to identify and replace any nonpurple pipe in the recycled water distribution system installed after June 1, 1993 that is not in compliance with the this code. The report shall be submitted within 90 days of the adoption of this permit. A report documenting full compliance with this requirement shall be submitted by **August 1, 2008**.

12. The portions of the recycled water piping system that are in areas subject to access by the general public shall not include any hose bibbs. Only quick couplers that differ from those used on the potable water system shall be used on the portions of the recycled water piping system in areas subject to public access. [CCR Title 22, 60310(I)]
13. Cross-connections shall not occur between any recycled water system and any separate system conveying potable water. [22 CCR, Section 60310(h)]
Supplementing recycled water with potable water shall not be allowed except through air gap separation [CCR Title 22, Section 30615].
14. All reservoirs and ponds shall be adequately protected from erosion, washout, or flooding from a rainfall event having a predicted frequency of once in 100 years.
15. Disinfected tertiary recycled water shall not be irrigated within 50 feet of any domestic water supply well or domestic water supply surface intake, unless the

technical requirements specified in CCR Title 22, Section 60310(a) have been met and approved by DHS.

16. The use of recycled water shall not cause degradation of any water supply.
17. Areas irrigated with recycled water shall be managed to prevent ponding and conditions conducive to the proliferation of mosquitoes and other disease vectors, and to avoid creation of a public nuisance or health hazard. Irrigation water shall infiltrate completely within a 24-hour period.
18. All areas where recycled water is used that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4 inches high by 8 inches wide that include the following wording: 'RECYCLED WATER – DO NOT DRINK'. [CCR Title 22, Section 60310(g)] Each sign shall display an international symbol similar to that shown in CCR Title 22, Figure 60310-A. These warning signs shall be posted at least every 500 feet with a minimum of a sign at each corner and access road.
19. DHS Guidance Memo No. 2003-02: Guidance Criteria for the Separation of Water Mains and Non-Potable Pipelines provides guidance for the separation of new potable water mains and recycled water pipelines which shall be implemented as follows:
 - a. There shall be at least a four-foot horizontal separation between all pipelines transporting recycled water and those transporting disinfected tertiary recycled water and new potable water mains.
 - b. There shall be at least a one-foot vertical separation at crossings between all pipelines transporting recycled water and potable water mains, with the potable water main above the recycled water pipeline, unless approved by the DHS.
 - c. All portions of the recycled water pipeline that cross under a potable water main shall be enclosed in a continuous sleeve.
 - d. Recycled water pipelines shall not be installed in the same trench as new water mains.
 - e. Where site conditions make it impossible to comply with the above conditions, any variation shall be approved by DHS and comply with alternative construction criteria for separation between sanitary sewers and potable water mains as described in the DHS document title "Criteria for Separation of Water Mains and Sanitary Sewers", treating the recycled water line as if a sanitary sewer.

20. A minimum freeboard, consistent with pond design but not less than two feet, shall be maintained under normal operating conditions in any reservoir or pond containing recycled water. When extraordinary operating conditions necessitate a freeboard of less than two feet, the Discharger will document the variance in the monthly self-monitoring report. The report will include an explanation of the circumstances under which the variance is required, the estimated minimum freeboard during the extraordinary period, and any permit violations occurring as a result of the variance.
21. The use of recycled water for dust suppression shall only occur during periods of dry weather and shall be limited to periods of short duration.

C. Water Reclamation Provisions

1. The Discharger shall manage recycled water, and shall develop, establish and enforce administrative procedures, engineering standards, rules, ordinances and/or regulations governing the design and construction of recycled water systems and use facilities and the use of recycled water in accordance with the criteria established in CCR Title 22 and this Order. The Discharger shall develop user agreements requiring user compliance with CCR Title 22 and this Order. Water reclamation engineering standards, rules, ordinances and/or regulations shall be approved by the Regional Water Board Executive Officer and DHS.

Upon approval of the Discharger's procedures, engineering standards, rules, ordinances, and/or regulations, the Discharger may authorize specific additional water reclamation projects, on a case-by-case basis, in accordance with the approved program and agreements.

2. The Discharger shall submit revised and/or additional engineering report(s) for Regional Water Board and DHS approval, prior to initiating any recycled water use (e.g., new industrial use, recreational surface impoundments, water cooling, new dual-plumbed system, etc.) not addressed in any previously approved CCR Title 22 engineering report(s). Engineering report(s) shall be prepared by a properly qualified engineer registered in California and experienced in the field of wastewater treatment, and shall contain (1) a description of the design of the reclamation system; (2) a contingency plan which will assure that no untreated or inadequately treated wastewater will be delivered to the use areas; and (3) a cross-connection control program (Title 17 of the California Code of Regulations). Engineering reports shall clearly indicate the means for compliance with CCR Title 22 regulations and this Order.
3. The Discharger shall conduct periodic inspections of the recycled water use areas, facilities, and operations to monitor and assure compliance with the conditions of this Permit. The Discharger shall take whatever actions are necessary, including termination of delivery of recycled water, to correct any user violations. The Discharger shall, upon prior notification to the user, conduct regular inspections to

assure cross-connections are not made with potable water systems and DHS approved backflow prevention devices are installed and operable.

4. The Discharger shall be responsible for ensuring that recycled water meets the quality standards of this Order and for the operation and maintenance of transport facilities and associated appurtenances. The Discharger shall hold the recycled water users responsible for the application and use of recycled water on their designated areas and associated operations and maintenance in accordance with all applicable CCR Title 22 requirements and this Order.
5. The Discharger shall notify the Regional Water Board Executive Officer in anticipation of reclaiming water at a new location, prior to commencement of reclamation activities at the new location. The notice shall include the following: site location, acreage involved, County Assessor Parcel number(s), name of property owner and/or user, and a User Reclamation Plan. The User Reclamation Plan shall estimate the anticipated volume of recycled water to be used, describe the recycled water management facilities and operations plan, identify who is responsible for site management, reflect consultation with state and local health departments, and explain in detail how compliance with the User Reclamation Plan, CCR Title 22 Criteria, and the requirements of the Master Reclamation Permit will be achieved.
6. If, in the opinion of the Regional Water Board Executive Officer, recycled water use at proposed new locations cannot be adequately regulated under the Master Reclamation Permit, a Report of Waste Discharge may be requested and individual Water Reclamation Requirements may be adopted.
7. Prior to the initial operation of any dual-plumbed recycled water system, and annually thereafter, the Discharger shall ensure that the dual-plumbed system within each facility and use area is inspected for possible cross connections with the potable water system. The recycled water system shall also be tested for possible cross connections at least once every four years. The testing shall be conducted in accordance with the method described in the Engineering Report. The inspections and the testing shall be performed by a cross connection control specialist certified by the California-Nevada section of the American Water Works Association or an organization with equivalent certification requirements. A written report documenting the result of the inspection or testing for the prior year shall be submitted to DHS and the Regional Water Board within 30 days following completion of the inspection or testing. [CCR Title 22, Section 60316]
8. The Discharger shall notify DHS and the Regional Water Board of any incidence of backflow from the dual-plumbed recycled water system into the potable water system within 24 hours of the discovery of the incident.

9. Any backflow prevention device installed to protect the public water system serving the dual-plumbed recycled water system shall be inspected and maintained in accordance with Section 7605 of Title 17, CCR.
10. Any discharge of untreated or partially treated wastewater to the use area, and the cessation of the same, shall be reported immediately with an oral report ¹by telephone to the Regional Water Board Executive Officer, DHS, and the local health officer.

¹ Oral reporting means obtaining direct contact with a Regional Water Board staff person. The oral report may be given in person or by telephone. After business hours, oral contact must be made by calling the State Office of Emergency Services or the Regional Water Board spill officer.